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1959  
Report of Alfalfa Nurseries  
Eastern Alfalfa Improvement Conference

Conducted cooperatively with the various  
State Agricultural Experiment Stations  
and  
The United States Department of Agriculture,  
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1959  
Report of Alfalfa Nurseries  
Eastern Alfalfa Improvement Conference

Report compiled by C. H. Hanson, Research Agronomist,  
Forage and Range Research Branch, Agricultural Research Service,  
U. S. Department of Agriculture.

INTRODUCTION

This is the fourth Alfalfa Nurseries Report assembled by the Eastern Alfalfa Improvement Conference. Reports submitted by the various States comprise data from an array of alfalfa breeding materials and varieties. The data in this compilation are inconclusive and represent progress reports only, and as such may contain findings which may or may not be verified in subsequent experiments. Data reported, and statements contained herein, do not constitute publication. For this reason, citation to any part of this Report should not be published without prior permission from the Experiment Station(s) and worker(s) concerned.

ARKANSAS

Alfalfa Variety Yield Trials - 1959

In general, climatic conditions during the 1959 season in Arkansas were very favorable for the growth of alfalfa. Although precipitation was below normal in most areas of the State, distribution was excellent, except for a period in July. Cooler than normal summer temperatures also favored the growth of alfalfa.

No serious disease problems were encountered in 1959, but Stemphylium leaf spot (Stemphylium botryosum), common leaf spot (Pseudopeziza medicaginis), and downy mildew (Peronospora trifoliorum) were observed on alfalfa in several localized areas.

A heavy leafhopper infestation occurred over the entire State in 1959, and where control measures were not taken, the yield and quality of the third and fourth cuttings were reduced materially in numerous instances. The heavy population of leafhoppers provided an opportunity to obtain additional information in regard to the tolerance of individual varieties and strains to this insect. Pea aphids, spotted alfalfa aphids, and three-cornered alfalfa hoppers were reported over a wide area, but only minor damage occurred, with the exception of a few isolated cases.

Satisfactory weed control was obtained through the use of herbicides on the test areas at Fayetteville, and Hope. Weeds were not of enough importance at the Keiser locations to warrant the use of weed control measures.

The 1960 varietal recommendations for Arkansas are as follows: Buffalo and Ranger, in that order, are recommended for the entire State. Lahontan is recommended for the heavy clay delta soils. Vernal will be placed on the recommended list for the first time for the upland soils of northern and western Arkansas.



Table 1. Alfalfa Variety Yield Test - 1959

Block 37, Agronomy Farm, Fayetteville, Arkansas

Randomized block; 4 replications

September 20, 1956 on Newtonia Silt Loam

40-80-30 fertilizer and 2 tons of lime per acre at time of seeding. Topdressed with 25-50-100 fertilizer per acre on February 28, 1957, 0-30-60 fertilizer per acre on March 21, 1958, and 0-60-30 fertilizer per acre on February 27, 1959.

Plot Size: 5 feet by 20 feet.

Seeding Rate: 20 pounds of live, pure seed per acre.

Harvested: 4 times (May 7, June 15, July 24, and August 28, 1959).

Variety	Hay yield in tons per acre (12% moisture)								Stand 1/	Percent Leaves 2/ 3yr Ave.		Spring Vigor 3/	Fall Vigor 4/	Recvry After Cutng 5/	Leaf- hopper rating 6/
					Total	3 yr av (57-59)									
	1st Cut	2nd Cut	3rd Cut	4th Cut	1959		1959	Ave.							
Du Puits F.C. 24697	1.53	1.30	.57	.34	3.74	3.68	51	48.5	51.8	3.5	4.3	3.2	3.5		
Canadian S.C. Ma. 531	.59	.78	.43	.16	1.96	2.75	37	51.7	57.6	8.0	7.5	8.0	2.0		
Lahontan F.C. 33087	1.35	1.08	.58	.33	3.34	3.09	45	49.7	53.5	5.0	4.8	4.5	8.0		
Indiana Syn. "F" F.C. 33188	1.68	1.16	.65	.33	3.82	3.52	47	49.5	54.6	6.0	6.0	6.0	2.0		
New Mexico 11-1 F.C. 33209	1.67	1.29	.80	.49	4.25	3.86	52	46.2	49.8	4.5	5.3	4.5	4.0		
Buffalo F.C. 32984	1.57	1.22	.79	.51	4.09	3.93	51	48.1	51.8	5.0	4.8	5.0	5.0		
Socheville P.I. 224623	1.63	1.23	.87	.48	4.26	4.17	50	48.6	50.9	3.2	3.8	4.0	5.0		
N.C. Syn. B(51)7 F.C. 32644	1.91	1.33	.77	.46	4.47	4.11	55	47.2	51.5	4.0	5.3	5.0	4.0		
Williamsburg F.C. 33204	1.72	1.35	.89	.50	4.46	4.17	52	47.9	49.8	4.7	4.3	5.0	4.0		
Caliverde F.C. 32594	1.53	1.09	.70	.36	3.68	3.17	43	49.1	51.6	4.7	4.5	5.0	6.0		
Vernal F.C. 31983	1.69	1.29	.84	.44	4.26	4.23	51	47.6	54.5	6.0	6.0	6.0	3.0		
Atlantic F.C. 33492	1.56	1.21	.81	.42	4.00	3.92	50	45.9	50.3	5.2	5.5	5.5	5.0		
LSD at .05 level	.33	.22	.25	.16	.69		10	N.S.							
C.V.	15.1%	12.7%	23.5%	28.1%	12.5%		13.7%	5.5%							

1/ Stand counts were made by the point quadrat method on May 21, 1959. One hundred points were counted per 5' x 20' plot 14 days after first cutting was made. Stand based on number of hits per 100 points.

2/ Percent leaves based on samples of 40 stems per plot (June 15, 1959).

3/ Spring vigor based on scale of 1 to 9; 1= high vigor, 9= low vigor. Rated on April 9, 1959.

4/ Fall vigor based on scale of 1 to 9; 1= high vigor, 9= low vigor. Rated on September 21, 1959.

5/ Recovery after cutting based on scale of 1 to 9; 1= most rapid recovery, 9= least rapid recovery. Rated on June 3, 1959, 27 days after first cutting.

6/ Leafhopper rating based on scale of 1 to 9; 1= slight injury, 9= severe injury. Rated on July 8, 1959 (27 days after 1st cut).

ARKANSAS - Fayetteville

Table 2. Alfalfa Synthetic Variety Yield Test - 1959

Location:

Block 37, Agronomy Farm, Fayetteville, Arkansas

Design:

Randomized block; 4 replications.

Established:

September 20, 1956 on Newtonia Silt Loam

Soil Treatment:

40-80-80 fertilizer and 2 ton lime per acre at time of seeding. Topdressed with 25-50-100 per acre on February 27, 1957, 0-30-60 fertilizer per acre on March 21, 1958, and 0-60-30 fertilizer per acre on February 27, 1959.

Plot Size:

5 feet by 20 feet

Seeding Rate:

20 pounds of live, pure seed per acre

Harvested:

4 times (May 7, June 15, July 24, and August 28, 1959).

Variety	Hay yield in tons per acre (12% moisture)						Percent Leaves 2/ 3-yr Ave.		Spring Vigor 3/	Fall Vigor 4/	Recvry after cutting 5/	Leaf- Hopper rating 6/
	1st Cut	2nd Cut	3rd Cut	4th Cut	Total 1959	3yr av (57-59)	1/ Stand	1959				
	Cut	Cut	Cut	Cut								
A- 225 Syn 4	1.42	1.20	.96	.59	4.17	3.80	44	47.2	5.5	4.7	6.0	4.0
Indiana Syn. "F" F.C. 33188	1.66	1.22	1.08	.71	4.67	4.20	45	46.9	6.3	5.7	6.0	3.0
Vernal F.C. 31983	1.43	1.17	1.12	.57	4.29	4.08	46	47.1	6.3	5.7	6.0	3.0
A-253 Syn. 1	1.74	1.23	.97	.57	4.51	3.98	52	47.4	5.3	6.0	5.8	4.0
Buffalo F.C. 32984	1.50	1.25	1.22	.70	4.67	4.08	47	45.2	5.0	5.0	5.0	5.0
A - 224 Syn. 3	1.18	1.10	.86	.51	3.65	3.56	43	48.3	7.0	6.5	7.0	2.5
A - 248 (Grandfield)	1.74	1.26	1.11	.60	4.71	4.10	48	46.3	5.3	5.2	5.0	3.5
A - 204 Syn. 4	1.75	1.27	1.10	.54	4.66	4.13	47	48.8	6.5	6.5	6.0	3.5
A - 223 F.C. 24993	1.54	1.21	1.00	.61	4.36	3.91	44	46.6	6.3	6.0	6.0	4.0
Ranger	1.28	1.17	1.04	.61	4.10	3.66	42	48.5	5.8	5.2	5.0	7.0
LSD at .05 level	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.				
C.V.	18.0%	9.6%	16.8%	23.9%	12.5%		12.3%	8.2%				

1/ Stand counts were made by the point quadrat method on May 21, 1959. One hundred points were counted per 5'x20' plot 14 days after first cutting was made. Stand based on number of hits per 100 points.

2/ Percent leaves based on samples of 40 stems per plot (June 15, 1959).

3/ Spring vigor based on scale of 1 to 9; 1= high vigor, 9= low vigor. Rated on April 9, 1959.

4/ Fall vigor based on scale of 1 to 9; 1= high vigor, 9= low vigor. Rated on September 21, 1959.

5/ Recovery after cutting based on scale of 1 to 9; 1= most rapid recovery, 9= least rapid recovery. Rated on June 3, 1959, 27 days after first cutting.

6/ Leafhopper rating based on scale of 1 to 9; 1= slight injury, 9= severe injury. Rated on July 8, 1959.

## ARKANSAS - Fayetteville

Table 3. Alfalfa "Plant Type" Variety Field Test - 1959

## Location:

Block 27, Agronomy Farm, Fayetteville, Arkansas

## Design:

Randomized block; 4 replications

## Reestablished:

March 13, 1957 on Newtonia Silt Loam

## Soil Treatment:

2 tons lime per acre applied in August 1956. 40-80-80 fertilizer per acre applied in September 1956 and 30-60-120 fertilizer per acre March 1, 1957. Topdressed with 0-30-60 fertilizer per acre March 21, 1958 and 0-60-30 fertilizer per acre February 27, 1959

## Plot Size:

5 feet x 20 feet

## Seeding Rate:

20 pounds of live, pure seed per acre

## Harvested:

4 times (May 8, June 15, July 24, and August 28, 1959)

## Plant Types:

Lahontan and Buffalo are high crown, hay types; Vernal is a low crown, hay type; Rhizoma and Sevelra are low crown, rhizomatous, pasture types; and Rambler is a low crown, creeping-rooted, pasture type.

Variety	Hay yield in tons per acre (12% moisture)					Total 1959	2 yr av 58-59	Stand 1/ 2/	Fall Vigor 2/ 3/	Recovery after Cutting
	1st Cut	2nd Cut	3rd Cut	4th Cut						
Sevelra	1.18	.95	.65	.35		3.13	3.64	42	5.8	6.0
Lahontan	.75	.75	.46	.23		2.19	2.41	26	3.8	5.0
Rambler	.50	.74	.34	.18		1.76	2.22	19	8.0	8.0
Rhizoma	1.00	.99	.74	.38		3.11	3.64	47	6.0	6.2
Vernal	1.28	1.08	.72	.37		3.45	4.16	41	6.0	6.0
Buffalo	1.23	.94	.55	.31		3.03	3.62	45	5.0	5.0
LSD at .05 level	.42	.23	.22	.15		.81		9.9		
C. V.	28.0%	16.9%	24.8%	31.9%		19.4%		36.6%		

1/ Stand counts were made by the point quadrat method on May 21, 1959. One hundred points were counted per 5' x 20' plot 13 days after the first cutting was made. Stand based on number of hits per 100 points. Initial stand of Lahontan injured by blackstem in 1957.

2/ Fall vigor based on scale of 1 to 9; 1= high vigor, 9= low vigor. Rated on September 21, 1959

3/ Recovery after cutting based on scale of 1 to 9; 1= most rapid recovery, 9= least rapid recovery. Rated on June 3, 1959, 26 days after first cutting.



Table 4.

Lower Mississippi Valley Uniform Alfalfa Test #5 - 1959  
 Location: Northeast Branch Experiment Station, Keiser, Arkansas  
 Design: Randomized block; 4 replications  
 Established: October 6, 1959 on Sharkey clay soil (very heavy)  
 Soil Treatment: 30-60-60 fertilizer per acre applied at time of seeding  
 Plot Size: 5 feet by 20 feet  
 Seeding Rate: 20 pounds of live, pure seed per acre  
 Harvested: 5 times (April 23, June 17, July 23, September 9, and October 23, 1959)

Variety	Hay yield in tons per acre (12% moisture)						Stand 1/ 1959	Leafhopper rating 2/ 1959
	1st Cut	2nd Cut	3rd Cut	4th Cut	5th Cut	Total 1959		
Buffalo F.C. 34042	.68	.66	1.48	.91	.77	4.50	78	3.0
N.C. Syn. B (51) 7	.75	.56	1.46	1.03	.86	4.66	85	3.0
Lahontan F.C. 33718	.84	.56	1.15	.57	.68	3.80	81	5.0
Vernal F.C. 34104	.94	.68	1.47	1.04	.81	4.94	85	2.5
Ranger F.C. 34043	.95	.71	1.46	.98	.76	4.86	89	4.3
N.C. Syn A (51) 5	.87	.60	1.48	.99	.84	4.78	86	3.0
N.C. Syn. D (51) 12	.59	.57	1.52	1.05	.82	4.55	79	3.0
Rhizoma F.C. 34035	.39	.51	1.16	.62	.44	3.12	74	2.8
Stoneville P.C. #1	.75	.53	1.50	1.16	.92	4.86	90	3.0
N.C. Syn. AB (57)	.38	.52	1.41	1.01	.83	4.15	76	2.0
Stoneville Buffalo Sel.	.57	.56	1.54	1.14	.78	4.59	83	2.8
Kansas Syn. B <sub>1</sub>	.57	.57	1.53	.91	.79	4.37	79	3.5
LSD at .05 level	.27	N.S.	.24	.31	.15	.82	N.S.	
C.V.	27.0%	15.3%	11.7%	22.5%	13.6%	12.8%	9.8%	

1/ Stand counts were made by the point quadrat method on August 11, 1959. One hundred points were counted per 5' x 20' plot 19 days after third cutting was made. Stand based on number of hits per 100 points.

2/ Leafhopper rating based on scale of 1 to 9; 1 = slight injury, 9 = severe injury. Rated on July 23, 1959.

## ARKANSAS - Keiser

Table 5. Lower Mississippi Valley Uniform Alfalfa Test #6 - 1959  
 Location: Northeast Branch Experiment Station, Keiser, Arkansas  
 Design: Randomized block; 4 replications  
 Established: September 16, 1958 on Sharkey clay loam (medium soil)  
 Soil Treatment: 30-60-60 fertilizer per acre at time of seeding.  
 Plot Size: 5 feet by 20 feet.  
 Seeding: 20 pounds of live, pure seed per acre  
 Harvested: 6 times: (April 22, June 8, June 29, August 10, September 8, and October 22, 1959)

Variety	Hay yield in tons per acre (12% moisture)							Recovery after Cutting1/ rating2/ rating3/ rating4/	Leaf color rating2/ rating3/ rating4/	Leaf hopper rating3/ rating4/	Mildew rating 4/
	1st Cut	2nd Cut	3rd Cut	4th Cut	5th Cut	6th Cut	Total 1959				
Stoneville P.C. #1	1.02	1.08	.78	1.36	.46	1.46	6.16	5.3	3.5	3.5	4.5
Stoneville Buffalo Sel.	1.15	1.34	.70	1.15	.30	1.40	6.04	5.0	3.5	2.3	2.5
Buffalo	1.24	1.32	.83	1.13	.33	1.46	6.31	4.5	3.8	2.8	3.5
N.C. Syn. AB (57)	.96	.95	.76	1.26	.35	1.56	5.84	4.0	2.8	1.8	2.5
N.C. Syn. A (51) 5	1.27	1.48	.83	1.25	.33	1.38	6.54	4.0	3.8	3.0	2.0
N.C. Syn D (51) 12	1.11	1.23	.80	1.20	.37	1.46	6.17	4.0	3.3	3.0	3.0
N.C. Syn. B (51) 7	1.30	1.43	.82	1.20	.31	1.55	6.66	4.3	3.3	2.3	2.0
Ranger	1.31	1.38	.77	1.19	.24	1.42	6.31	5.0	4.0	4.0	2.0
Kansas Syn. B1	1.13	1.25	.81	1.17	.34	1.45	6.15	4.8	4.3	3.0	2.0
Lahontan	1.13	1.14	.89	.94	.27	1.24	5.61	3.0	3.8	5.5	3.5
RRhizoma	.99	.88	.60	1.06	.21	1.24	5.18	6.0	4.0	3.3	1.5
Vernal	1.28	1.36	.63	1.14	.22	1.31	6.14	5.8	3.5	3.3	2.0
LSD at .05 level	.16	.20	N.S.	.16	.09	.08	.33				
C.V.	9.5%	7.7%	9.9%	9.6%	20.8%	4.2%	4.3%				

1/ Recovery after cutting based on scale of 1 to 9; 1= most rapid recovery, 9= least rapid recovery.

1/ Recovery after cutting based on scale of 1 to 9; 1= most rapid recovery, 9= least rapid recovery.

Rated on May 21, 1959, 29 days after first cutting.

2/ Leaf color rating based on scale of 1 to 9; 1= dark green, 9= light green. Rated on June 29, 1959

3/ Leafhopper rating based on scale of 1 to 9; 1= slight injury, 9= severe injury. Rated on August 10, 1959

4/ Mildew rating based on scale of 1 to 9; 1= mild infection, 9= severe infection. Rated on April 22, 1959.

Table 6. Lower Mississippi Valley Alfalfa Test #8 - 1959  
 Location: Southwest Branch Experiment Station, Hope, Arkansas (Furtle plot).

Design: Randomized block; 4 replications  
 Established: September 4, 1958 on Houston clay (blackland soil)  
 Soil Treatment: 40-80-40 fertilizer per acre applied at time of seeding.

Plot Size: 5 feet by 20 feet

Seeding Rate: 20 pounds of live, pure seed per acre

Harvested: 5 times (May 7, June 17, July 13, August 11, and October 2, 1959)

Variety	Hay yield in tons per acre (12% moisture)						Stand 1/ _
	1st Cut	2nd Cut	3rd Cut	4th Cut	5th Cut	Total 1959	
Buffalo	2.00	1.58	.98	.66	.58	5.80	100
Stoneville P.C. #1	1.87	1.49	.99	.70	.55	5.60	109
N.C. Syn. B (51) 7	2.24	1.69	1.03	.71	.59	6.26	103
N.C. Syn. AB (57)	2.14	1.65	.92	.65	.58	5.94	83
N.C. Syn. D (51) 12	1.95	1.59	.96	.69	.61	5.80	95
N.C. Syn. A (51) 5	2.14	1.62	.96	.64	.56	5.92	99
Stoneville Buffalo Sel.	1.93	1.56	1.08	.71	.57	5.85	103
Rhizoma	1.72	1.40	.84	.60	.46	5.02	91
Ranger	1.89	.98	.64	.40	.43	4.34	90
Kansas Syn. B1	2.00	1.49	1.05	.75	.67	5.96	96
Vernal	2.03	1.30	.69	.49	.53	5.04	90
Lahontan	1.72	.92	.71	.38	.48	4.21	89
LSD at .05 level	.24	.15	.12	.06	.06	.58	
C. V.	8.5%	7.3%	9.5%	6.5%	7.8%	7.3%	

1/ Stands recorded as percent of Buffalo. Stands rated on May 21, 1959, 14 days after first cutting on the basis of visual estimates.



## GEORGIA - BLAIRSVILLE

Table 7. Alfalfa variety test, 1959; planted August 28, 1958; rate of seeding - 30 lbs./acre; method of seeding - broadcast; plots 5' x 20'; randomized block design - 3 replications\*

Entry	Yield - tons dry matter/acre				Total 4 cuts.
	Cut. 1 5-28	Cut. 2 7-7	Cut. 3 8-5	Cut. 4 9-22	
Du Puits	2.03	1.58	.97	.64	5.22
N. C. A.B. ('57)	1.84	1.35	.94	.69	4.82
N. C. Syn. F <sub>1</sub> ('56)	1.94	1.29	.94	.63	4.80
Socheville	1.88	1.48	.86	.53	4.75
N. K. - 510	1.64	1.33	.95	.57	4.49
N. C. Syn. G <sub>4</sub> ('57)	1.67	1.52	.81	.46	4.46
N. C. Syn. G <sub>1</sub> ('57)	1.60	1.28	.93	.61	4.42
Narragansett	1.69	1.17	.92	.61	4.39
Williamsburg	1.41	1.35	.94	.57	4.27
Uruguay Clone #10	1.39	1.28	.85	.66	4.18
Atlantic	1.61	1.12	.91	.51	4.15
Caliverde	1.36	1.21	.78	.55	3.90
Vernal	1.89	.84	.75	.41	3.89
Buffalo	1.43	1.23	.74	.47	3.87
Okla. Common	1.17	1.27	.79	.58	3.81
N. C. Syn. F <sub>2</sub> ('56)	1.34	1.03	.97	.45	3.79
New Mexico 11-1	1.28	1.30	.71	.38	3.67
Italian Selection	1.11	1.10	.89	.41	3.51
Lahontan	1.32	1.22	.67	.23	3.44
Ranger	1.16	.90	.52	.20	2.78
Sirsa No. 9	.87	.63	.42	--	1.92
LSD .05	.26	.38	.18	.13	.58
.01	.34	.51	.24	.18	.77
CV	10.4%	19.1%	13.2%	15.7%	8.7%

\*Four replications were planted but one was discarded because of poor inoculation.

## GEORGIA - Experiment

Table 8.

Alfalfa Variety Trial, 1957-1959. Seeded Oct. 16, 1956 20 lbs/A. Randomized block, 4 Replications, Plots - 3' x 20', 6 drill rows. Whole plot harvested, forage dried at 70°C for yield determinations.

FC Number Variety	Yield — Tons Dry Matter/Acre			
	1957	1958	1959	Average
FC 32173 African	3.08	1.50	2.11	2.23
33492 Atlantic	2.96	1.89	3.31	2.72
32984 Buffalo	3.36	1.97	2.96	2.76
32594 Caliverde	3.59	1.94	2.95	2.83
24821 Chilean	2.60	1.84	2.70	2.38
24697 Du Puits	4.76	2.76	4.32	3.95
32174 Indian	3.70	1.44	2.10	2.41
23143 Kansas common	2.68	2.17	3.50	2.78
33087 Lahontan	3.21	1.87	3.35	2.81
32768 Narragansett	3.85	2.44	3.85	3.38
33209 New Mexico 11-1	3.68	2.35	3.40	3.14
32567 Oklahoma common	3.72	2.18	3.45	3.12
33347 Ranger	3.62	1.99	3.27	2.96
33346 Rhizoma	3.11	1.99	3.07	2.72
22463 Socheville	4.21	2.58	4.03	3.60
32139 Talent	3.23	1.99	2.82	2.68
31983 Vernal	3.97	1.94	3.55	3.15
33204 Williamsburg	3.40	1.86	2.98	2.75
L.S.D. 5%	.41	.25	.43	

Notes: Stand of African and Indian reduced on account of winter-killing, and Lahontan by diseases.

Dates Harvested: 1957 - April 3, (discarded on account of weeds), May 20, July 10, and August 22. 1958 - May 15 (discarded), June 24, July 24, and August 29. 1959 - April 24, June 4, and July 13. Yields above are for 3 harvests each year.

## KENTUCKY - Lexington

Table 9.

Alfalfa Variety Trial, 1959. Planted February 19, 1954. Randomized Block Design.  
Four Replications. Plots 5' X 25'.

Variety	Yield - Tons dry matter/Acre						Yearly Ave.
	1954 3 cuts	1956 3 cuts	1957 4 cuts	1958 4 cuts	1959 2 cuts	Total 5 years	
Orestan	2.57	4.52	3.99	3.30	1.21	15.58	3.12
Pilca Butta	1.12	3.32	3.35	2.52	0.84	11.15	2.23
Vernal	3.52	4.61	4.29	3.78	1.56	17.76	3.55
Atlantic	3.38	4.98	4.25	3.98	1.41	18.00	3.60
Narragansett	3.66	4.76	4.59	3.99	1.30	18.31	3.66
Buffalo	3.39	4.73	4.62	4.56	1.99	19.30	3.86
Nomad	0.98	2.89	2.29	1.37	0.41	7.94	1.59
Caliverde	1.49	3.09	3.07	2.04	0.89	10.57	2.11
Du Puits	3.61	5.15	5.12	4.52	1.54	19.95	3.99
Ranger	3.09	4.70	4.31	4.24	1.88	18.21	3.64
Williamsburg	3.20	4.71	4.68	3.92	1.66	18.16	3.63
Talent	1.63	3.84	3.53	3.53	1.40	14.06	2.81
Rhizoma	3.03	4.42	4.04	3.14	0.94	15.56	3.11
Flamande-Socheville	3.08	4.63	4.55	4.28	1.60	18.14	3.63
Sevelra	2.12	4.56	3.37	2.55	0.71	13.32	2.66
Oklahoma Common	3.06	4.87	4.60	4.11	1.44	18.08	3.62
Ferax	2.93	4.42	3.88	2.62	0.57	14.42	2.88
California Common	0.73	3.18	2.58	1.41	0.36	8.28	1.66
Nemastan	1.20	3.31	3.20	3.94	1.06	12.72	2.54
Kansas Common	2.49	4.50	4.36	3.48	1.16	16.00	3.20
L.S.D. .05	0.71	0.98	0.61	0.69	0.64	2.45	0.49
.01	0.95	1.30	0.81	0.92	0.86	3.25	0.65
C.V. %							5.1
Years						***	
Years X Varieties						**	

## KENTUCKY - Princeton and Campbellsville

Table 10. Kentucky - Princeton and Campbellsville  
 Alfalfa Variety Trial, 1959. Planted fall of 1955. Randomized block design. Plots 5' x 25'.

Variety	Yield - Tons dry matter/Acre											
	Princeton				Campbellsville				2 locations			
	(3 cuts) 1956	(3 cuts) 1957	(4 cuts) 1958	(4 cuts) 1959	(3 cuts) 1956	(4 cuts) 1957	(4 cuts) 1958	(4 cuts) 1959	4 cuts 1959	4 cuts 1959	4-year Total	4-year yearly Total Ave.
Buffalo	2.79	4.21	3.94	5.00	2.79	3.60	3.90	2.45	3.73	3.73	12.73	14.34 3.58
Atlantic	2.89	4.19	4.14	4.98	3.30	3.31	3.46	2.20	3.59	3.59	12.28	14.24 3.56
Rhizoma	2.93	3.42	3.45	4.09	2.93	3.47	3.77	2.73	3.41	3.41	12.90	13.40 3.35
Narragansett	2.71	3.95	3.74	4.87	3.04	3.27	3.96	3.30	4.08	4.08	13.56	14.43 3.61
Williamsburg	2.63	4.40	3.91	4.61	2.99	3.50	3.85	2.43	3.52	3.52	12.77	14.16 3.54
Du Puits	3.22	4.35	4.10	5.16	3.48	3.58	4.34	2.62	3.89	3.89	14.01	15.42 3.86
Vernal	2.95	3.87	3.82	4.96	3.45	4.02	4.08	3.14	4.05	4.05	14.68	15.14 3.78
Okla. Common	2.99	4.20	3.95	4.94	3.36	3.79	4.28	2.59	3.76	3.76	14.02	15.04 3.76
Ranger	2.36	3.63	3.61	4.56	3.13	3.47	3.75	2.53	3.54	3.54	12.87	13.52 3.38
L.S.D. .05	0.46	0.39	0.35	N.S.	N.S.	N.S.	N.S.	0.26	0.65	0.65	N.S.	0.41 0.10
.01	N.S.	0.54	0.48	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.	0.54 0.14
C.V. %			3.6	15.7			5.7	6.7	11.9	11.9	15.7	11.6
Significance of interactions and other variables:												
Years	--	--	--	**	--	--	--	--	--	--	**	**
Years x Var.	--	--	--	N.S.	--	--	--	--	--	--	*	N.S.
Locations	--	--	--	--	--	--	--	--	--	--	**	**
Locations x Var.	--	--	--	---	--	--	--	--	--	--	*	**
Locations x yrs	--	--	--	---	--	--	--	--	--	--	--	**



Table 11. Kentucky - Woodford County and Princeton  
Alfalfa Variety Trial, 1959. Planted in the spring of 1956. Randomized Block Design. Plots 5' x 25'.

Variety	Yield - Tons dry matter/Acre									
	Princeton					Woodford				
	(3 cuts) 1957	(3 cuts) 1958	(4 cuts) 1959	(4 cuts) 3-year Total	(3 cuts) 1957	(4 cuts) 1958	(4 cuts) 1959	(4 cuts) 3-year Total	1959	3-year Total Ave.
N.C. Syn. A(51)5 Narragansett	4.08 4.48	3.99 4.04	4.44 4.89	12.51 13.41	3.23 3.07	4.70 4.59	3.98 3.50	11.91 11.16	4.21 4.20	12.45 12.33
N.C. Syn. B(51)7 N. C.Syn. D(51)10	4.20 4.39	3.96 4.04	5.06 4.55	13.22 12.98	2.95 2.98	4.91 4.98	3.74 3.93	11.60 11.89	4.40 4.24	12.41 12.44
Williamsburg N.C. Syn.B(51)6	4.07 4.73	4.12 3.99	4.41 4.54	12.61 13.26	2.75 3.07	4.97 4.87	3.77 3.91	11.49 11.85	4.10 4.23	12.08 12.55
Buffalo N.C. Syn.D(51)12	4.19 4.19	3.99 3.84	4.68 4.70	12.84 12.72	2.77 3.08	4.61 4.86	3.66 3.89	11.04 11.73	4.18 4.30	11.96 12.27
Vernal Du Puits Atlantic	4.02 3.94 3.93	4.06 4.35 4.12	4.76 4.97 4.26	12.84 13.26 12.31	3.11 3.32 3.11	4.47 4.80 4.64	3.79 3.81 3.90	11.37 11.86 11.65	4.27 4.39 4.09	12.10 12.59 11.98
L.S.D. .05	N.S.	N.S.	0.22	N.S.	0.31	0.33	N.S.	N.S.	N.S.	N.S.
.01	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
C.V. %	6.8	12.0	13.0	8.4	4.1	4.8	6.6	8.1	5.4	13.1
Interactions etc.										
Years	-	-	-	**	-	-	-	**	-	**
Years x Varieties	-	-	-	N.S.	-	-	-	*	-	N.S.
Locations	-	-	-	-	-	-	-	-	**	**
L X V	-	-	-	-	-	-	-	-	-	**
L x Y	-	-	-	-	-	-	-	-	-	**

## MAINE - Orno

Table 12. NE-28 Alfalfa Polycross Test III - 1957

Location: Presque Isle, Maine 1959 Data  
 Seeded: July 1957 at 12 lb./A.  
 Replications: Four

Polycross or Variety	Total Yield in T/A (12% M)			Season Yield	Average 57-58
	Cut 1	Cut 2	Cut 3		
PA 51A-542	1.34	.62	1.07	3.04	3.72
PA 51A-516	1.19	.60	.91	2.70	3.23
PA 51A-503	1.56	.75	1.37	3.67	4.24
Pa 51A-504	1.74	.87	1.38	3.68	4.25
Pa 51A-513	1.40	.68	.95	3.03	3.64
Pa 51A-511	1.44	.66	.98	3.08	3.54
Atlantic	2.11	1.16	1.36	4.63	4.71
DuPuits	2.33	1.30	1.55	5.18	5.37
Narragansett	2.02	1.11	1.33	4.82	4.91
Vernal	2.27	.86	1.51	4.64	4.90
Average	1.74	.90	1.24	3.88	4.27
F - Varieties	12.07**	22.76**	7.23**	12.38**	
L.S.D. (P = .05)	.35	.17	.37	.58	
C.V. %	13.8	12.7	14.2	10.3	

\*\* DuPuits was the highest yielding alfalfa in these tests and more rapid in recovery after the first cutting. This variety was least infected with common leaf spot (Pseudopeziza medicaginis).

## MARYLAND

Table 13. Hay Yields (Tons/Acre @12% Moisture) and Other Agronomic Characteristics of Alfalfa Varieties and Alfalfa-Orchardgrass Mixtures Evaluated at Trappe, Maryland, 1958-59.

Variety	1959						Seedling Vigor <u>1/</u> 10/25/58	Spring Vigor <u>1/</u> 4/14/59	Stand <u>1/</u> 10/31/59
	Yield								
	1st cut	2nd cut	3rd cut	4th cut	5th cut	Total			
Du Puits	1.71	1.60	1.26	0.95	0.72	6.24	4.5	9.3	8.0
Vernal	1.72	1.15	1.28	0.94	0.64	5.73	2.8	4.3	6.0
Narragansett	1.73	1.22	1.20	0.88	0.58	5.61	3.5	4.5	5.5
Williamsburg	1.63	1.20	1.27	0.99	0.84	5.93	3.7	6.2	9.7
Atlantic	1.65	1.19	1.32	1.04	0.85	6.05	3.8	6.5	6.7
Buffalo	1.78	1.36	1.26	1.04	0.88	6.32	3.7	6.5	9.0
Dupuits + Potomac	2.19	1.31	1.19	0.92	0.80	6.41	4.2	7.5	8.5
" + Penn. Med. Syn.	1.93	1.51	1.24	0.90	0.86	6.44	4.3	8.0	8.6
" + Pennlate	2.10	1.42	1.20	0.87	0.72	6.31	4.5	8.7	7.7
Narragansett + Potomac	1.86	1.06	1.19	0.90	0.62	5.63	3.5	3.8	5.7
" + Penn. Med. Syn.	1.84	1.14	1.27	0.92	0.56	5.73	3.3	3.8	5.0
" + Pennlate	1.75	1.03	1.18	0.88	0.54	5.38	3.3	3.2	4.8
N.C. AB (57)	1.73	1.18	1.25	1.00	0.89	6.05	3.2	4.5	8.0
N.C. Syn. A(51) 5	1.67	1.25	1.31	1.09	0.92	6.24	3.8	6.8	7.7
N.C. Syn. B(51) 6	1.59	1.38	1.30	1.08	0.97	6.32	4.2	8.0	8.3
N.C. Syn. B(51) 7	1.54	1.48	1.20	1.06	0.90	6.18	4.0	7.0	7.2
N.C. Syn. D(51) 12	1.67	1.23	1.22	1.04	0.75	5.91	3.5	6.3	8.0
N.C. Syn. G 4 (57)	1.76	1.46	1.28	0.90	0.72	6.12	4.3	8.5	7.3
MEAN	1.77	1.29	1.24	0.97	0.76	6.03	3.8	5.9	7.3
C.V. (%)	12.5	15.7	7.1	12.2	11.4	17.2			
L.S.D. .05	0.25	0.23	0.10	0.14	0.10	0.09			

1/ Scores 1 to 10: 1 = least and 10 = most.

Plots established September 16, 1958

Soil type - Sassafras sandy loam - highly productive

Replications - 6, RCB

Plot size - 6' x 20'

Fertilization - 500 lbs. 0-10-20 with boron, spring of 1959

Seeding rate - 24 lbs. alfalfa per acre

16 lbs. alfalfa, 4 lbs. orchardgrass per acre for mixtures

Insects controlled by application of granulated heptachlor in early  
March; timely applications of methoxychlor for leafhopper control.

Two droughts of short duration during growing season.

## NEW YORK - Ithaca

Table 14. Summary of 1957-59 Data from 1956 Alfalfa Variety Trial - Ketola Field, Ithaca, New York.  
Broadcast seeded May 11, 1956; 5 x 5 balanced lattice. Seeding rate: 50 viable seed/sq. ft.  
Cutting management: 3 cuts/season.

Random Number	Variety	Yield - Tons per Acre (12% M)					Yield - Alfalfa Fraction					% Stand	
		1957	1958	1959	Ave. 57-59	Ave. 57-58	1957	1958	1959	Ave. 57-59	Alfalfa	5/57	5/59
1	Ranger	4.29	4.87	2.82	3.99	4.58	3.85	4.85	1.86	3.52	88	75	13
2	New York Syn. 22	4.54	5.23	2.93	4.23	4.88	4.35	5.22	2.19	3.92	93	78	8
3	Narragansett	5.00	5.39	3.23	4.54	5.20	4.68	5.34	2.45	4.16	92	88	17
4	Narragansett	5.00	5.36	3.58	4.64	5.18	4.69	5.36	2.79	4.28	92	89	26
5	Vernal	4.84	5.08	3.02	4.31	4.96	4.60	5.08	2.31	4.00	93	86	20
6	Vernal	5.00	5.17	3.23	4.46	5.08	4.66	5.17	2.24	4.02	90	88	18
7	N.Y. Creeping-55	3.29	3.98	2.43	3.23	3.64	2.39	3.78	1.43	2.53	78	26	2
8	Atlantic	4.75	5.29	3.20	4.41	5.02	4.36	5.21	2.22	3.93	89	85	19
9	Lahontan	3.86	4.86	3.10	3.94	4.36	3.18	4.83	2.18	3.40	86	67	23
10	Williamsburg	4.87	5.38	2.82	4.35	5.12	4.38	5.34	1.83	3.85	88	84	16
11	New York 24	4.12	4.87	2.94	3.97	4.50	3.63	4.83	1.88	3.45	87	65	4
12	Grimm	4.68	5.35	3.13	4.38	5.02	4.31	5.31	2.24	3.95	90	81	17
13	DuPuits	5.10	5.48	3.03	4.53	5.29	5.03	5.48	2.25	4.25	94	93	24
14	DuPuits	5.07	5.76	3.20	4.67	5.42	4.98	5.71	2.42	4.37	94	89	25
15	New York 26A	3.88	4.41	2.66	3.64	4.14	3.33	4.37	1.61	3.10	85	55	9
16	Cardinal	5.11	5.73	3.50	4.78	5.42	5.02	5.73	2.89	4.55	95	91	39
17	Socheville	5.01	5.79	2.88	4.56	5.40	4.90	5.77	2.04	4.24	93	88	24
18	Desprez #5769	4.98	5.59	3.09	4.55	5.28	4.89	5.59	2.17	4.22	93	88	24
19	Desprez #5770	5.03	5.55	3.34	4.64	5.29	4.96	5.53	2.48	4.32	93	92	29
20	Lucerne Alfa	5.14	5.89	3.65	4.89	5.52	5.12	5.89	3.14	4.72	96	90	38
21	N.Y. Syn A (scar)	5.07	5.55	3.31	4.64	5.31	4.84	5.53	2.49	4.29	92	88	20
22	N.Y. Syn B	5.00	5.51	3.47	4.65	5.26	4.83	5.51	2.65	4.33	93	88	31
23	N.Y. Syn C (scar)	4.83	5.15	3.12	4.36	4.99	4.45	5.10	2.15	3.90	89	84	14
24	Purdue Syn F	4.68	5.15	3.32	4.38	4.92	4.51	5.11	2.61	4.08	93	88	23
25	New York 29A	4.47	4.91	2.91	4.09	4.69	3.83	4.80	1.95	3.53	86	76	8
	Average	4.70	5.25	3.12	4.35	4.98	4.37	5.21	2.24	3.94	91	81	19
	F - Varieties	18.05**	9.50**	1.87*	9.37**							9.37**	
	L.S.D. (P = .05)	.31	.40	.59	.34							.12	
	C. V. %	5.8	6.6	16.5	6.9							54.5	
	F = Var. x Years				2.49**								

Notes: 1957-58 average is the best basis for comparison in this trial. The winter of 58-59 caused abnormal damage under this management and essentially eliminated a year of production. Third year yields are considerably more variable - persistence is only partly attributable to differential survival ability.



Table 15. Summary of 1959 Data from 1956 Alfalfa Variety Trial - Ketola Field, Ithaca, New York.  
Broadcast seeded May 11, 1956; 5 x 5 balanced lattice. Seeding rate: 50 viable seed/sq. ft. Cutting management: 3 cuts/season

Random Number	Variety	Yield - Tons Per Acre (12% M)			% Legume			Total Yield		% Stand 5/9
		6/9	7/27	9/3	Total	6/9	7/27	9/3	Alfalfa Fraction	
1	Ranger	1.37	.91	.53	2.82	31	100	100	1.86	13
2	New York Syn. 22	1.32	1.07	.54	2.93	44	100	100	2.19	8
3	Narragansett	1.47	1.17	.60	3.23	46	100	100	2.45	17
4	Narragansett	1.63	1.30	.66	3.58	51	100	100	2.79	26
5	Vernal	1.36	1.06	.60	3.02	48	100	100	2.31	20
6	Vernal	1.53	1.08	.62	3.23	35	100	100	2.24	18
7	N.Y. Creeping - 55	1.26	.83	.34	2.43	21	100	100	1.43	2
8	Atlantic	1.56	1.05	.59	3.20	37	100	100	2.22	19
9	Lahontan	1.42	1.09	.58	3.10	36	100	100	2.18	23
10	Williamsburg	1.38	.90	.54	2.82	28	100	100	1.83	16
11	New York 24	1.40	1.00	.54	2.94	24	100	100	1.88	4
12	Grimm	1.47	1.06	.59	3.13	40	100	100	2.24	17
13	DuPuits	1.34	1.10	.59	3.03	42	100	100	2.25	24
14	DuPuits	1.47	1.09	.64	3.20	47	100	100	2.42	25
15	New York 26A	1.33	.89	.45	2.66	20	100	100	1.61	0
16	Cardinal	1.52	1.28	.71	3.50	59	100	100	2.89	39
17	Socheville	1.43	.96	.49	2.88	41	100	100	2.04	24
18	Desprez #5769	1.48	1.04	.57	3.09	38	100	100	2.17	24
19	Desprez #5770	1.52	1.16	.65	3.34	44	100	100	2.48	29
20	Lucerne Alfa	1.69	1.28	.69	3.65	69	100	100	3.14	38
21	N.Y. Syn A (scar.)	1.46	1.21	.65	3.31	43	100	100	2.49	20
22	N.Y. Syn B	1.57	1.23	.68	3.47	47	100	100	2.65	31
23	N.Y. Syn C (scar.)	1.45	1.05	.62	3.12	33	100	100	2.15	14
24	Purdue Syn F	1.52	1.16	.64	3.32	53	100	100	2.61	23
25	New York 29A	1.42	1.00	.50	2.91	32	100	100	1.95	8
	Average	1.45	1.08**	.58**	3.12*	40	100	100	2.24	19
	F-Varieties	1.26-	1.98**	2.18	1.87*					5.59*
	L.S.D. (P=.05)	.25	.25	.16	.59					11.8
	Ave. D.M. (%)	26.6	28.4	22.1	16.5					54.4
	C.V. %	15.1	20.2	23.6						

Notes: Winter conditions of 58-59 caused considerable damage to stands which had previously shown effects of cutting pressure and drainage in the 2nd year. Actual

Notes: Winter conditions of 58-59 caused considerable damage to stands which had previously shown effects of cutting pressure and drainage in the 2nd year. Actual winter kill was random but damage indicated by low spring vigor and K<sub>2</sub>O deficiency was very evident. Flemish strains recovered most rapidly. By season's end, remaining stands of most varieties showed more vigor and looked pretty good. 1st cutting yields were mostly quack or bluegrass.

Table 16. 1959 Data from 1956 Alfalfa Variety and Management Trial - Ketola Field.  
Broadcast seeded May 8, 1956; split-plot design; six replications;  
seeding rate: 10 lbs./acre; main plots are six cutting treatments in  
6 x 6 latin square; split-plots are six varieties.

Cutting Treatment A: 2 cuts; 1st by June 20; last cut mid-August

Random Number	Varieties	Total Yield - Tons/Acre			% Legume		Legume Fraction
		7/2	8/20	Total	7/2	8/29	
1	Vernal	1.89	1.26	3.15	45	100	2.11
2	Narrag.	2.01	1.44	3.45	71	↓	2.87
3	Ranger	1.88	1.26	3.14	42		2.05
4	Atlantic	1.83	1.40	3.23	61		2.52
5	DuPuits	1.99	1.53	3.51	71		2.94
6	Cardinal	1.87	1.40	3.26	67		2.65
	Average	1.91	1.38	3.29	59	100	2.51
	F - Var	.39-	2.93**	1.06-			
	L.S.D. (P=.05)	.33	.18	.44			
	C.V. %	14.6	10.9	11.4			
	% D.M.	29.1	32.6				

Cutting Treatment B: 3 cuts; 1st cut by June 10; last cut Sept. 20

Random Number	Varieties	Total Yield - Tons/Acre				% Legume			Legume Fraction
		6/12	7/27	9/17	Total	6/12	7/27	9/17	
7	Vernal	1.81	1.35	1.02	4.18	55	94	100	3.28
8	Narrag.	1.75	1.34	.98	4.07	64	93	↓	3.35
9	Ranger	1.72	1.18	.91	3.81	51	91		2.86
10	Atlantic	1.59	1.16	.96	3.71	61	95		3.03
11	DuPuits	1.61	1.20	.97	3.78	63	93		3.10
12	Cardinal	1.58	1.10	.88	3.55	62	93		2.88
	Average	1.67	1.22	.95	3.85	59	93	100	3.07
	F - Var.	1.86-	1.39-	.62-	1.46-				
	L.S.D. (P=.05)	.21	.25	.19	.56				
	C.V. %	10.5	17.2	16.8	12.3				
	% D.M.	26.5	28.2	26.8					

Cutting Treatment C: 3 cuts; 1st cut by June 10; last cut Sept. 10

Random Number	Varieties	Total Yield - Tons/Acre				% Legume			Legume Fraction
		6/12	7/27	9/10	Total	6/12	7/27	9/10	
13	Vernal	1.57	1.16	.86	3.59	53	92	100	2.76
14	Narrag.	1.67	1.15	.85	3.67	48	93	↓	2.72
15	Ranger	1.60	.97	.77	3.34	30	87		2.09
16	Atlantic	1.64	1.11	.81	3.56	44	91		2.54
17	DuPuits	1.57	1.21	.90	3.68	63	93		3.01
18	Cardinal	1.70	1.22	.94	3.85	72	96		3.34
	Average	1.62	1.14	.85	3.61	52	92	100	2.74
	F - Var.	.55-	1.47-	2.11-	1.04-				
	L.S.D. (P=.05)	.21	.22	.12	.48				
	C.V. %	11.1	15.9	11.8	11.2				
	% D.M.	27.0	28.2	22.5					

## NEW YORK - Ithaca

Table 16. 1959 Data from 1956 Alfalfa Variety and Management Trial - Ketola Field (Cont.)

Cutting Treatment D: 3 cuts; 1st cut by June 5; last cut Sept. 20

Random Number	Varieties	Total Yield - Tons/Acre				% Legume			Legume Fraction
		6/8	7/27	9/17	Total	6/8	7/27	9/17	
19	Vernal	2.01	1.55	1.19	4.75	79	92	100	4.20
20	Narragansett	1.92	1.43	1.16	4.50	74	89	↓	3.85
21	Ranger	1.64	1.16	.97	3.77	59	90		2.98
22	Atlantic	1.74	1.28	1.03	4.05	63	89		3.27
23	DuPuits	1.71	1.29	1.02	4.02	91	94		3.79
24	Cardinal	1.82	1.42	1.10	4.33	89	93		4.04
	Average	1.81	1.35	1.08	4.24	76	91	100	3.68
	F - Varieties	3.06*	3.02*	1.85-	3.58*				
	L.S.D. (P=.05)	.23	.23	.19	.55				
	C.V. %	10.5	14.4	14.6	11.0				
	% D.M.	25.2	28.4	26.5					

Cutting Treatment E: 3 cuts; 1st cut by June 10; last cut Sept. 30

Random Number	Varieties	Total Yield - Tons/Acre				% Legume			Legume Fraction
		6/12	7/27	10/6	Total	6/12	7/27	10/6	
25	Vernal	1.71	1.29	.75	3.75	68	96	100	3.15
26	Narrag.	1.83	1.34	.73	3.91	67	96	↓	3.24
27	Ranger	1.50	1.12	.68	3.30	56	96		2.60
28	Atlantic	1.56	1.17	.70	3.42	56	95		2.69
29	DuPuits	1.58	1.17	.72	3.46	84	93		3.14
30	Cardinal	1.60	1.30	.78	3.68	78	89		3.18
	Average	1.63	1.23	.73	3.59	68	94	100	2.99
	F - Var.	3.46*	1.32-	.50-	1.78-				
	L.S.D. (P=.05)	.19	.22	.15	.50				
	C.V. %	9.8	15.4	17.8	11.7				
	% D.M.	27.0	29.0	27.3					

Cutting Treatment F: 4 cuts; 1st cut May 25; last cut Oct. 10

Random Number	Varieties	Total Yield - Tons/Acre					% Legume				Legume Fraction
		5/25	7/9	8/14	10/6	Total	5/25	7/9	8/14	10/6	
31	Vernal	.67	.56	.58	.51	2.31	43	100	100	100	1.94
32	Narrag.	.73	.57	.51	.41	2.22	43	↓	↓	↓	1.80
33	Ranger	.59	.51	.46	.39	1.95	33				1.55
34	Atlantic	.56	.53	.41	.41	1.91	34				1.54
35	DuPuits	.53	.46	.40	.35	1.73	46				1.45
36	Cardinal	.58	.54	.50	.43	2.04	55				1.79
	Average	.61	.53	.48	.41	2.02	42	100	100	100	1.68
	F - Var.	.68-	1.45-	1.17-	1.28-	1.86-					
	L.S.D. (P=.05)	.26	.10	.18	.14	.45					
	C.V. %	36.3	15.9	31.6	27.8	18.8					
	% D.M.	17.5	26.7	28.3	24.3						



## NEW YORK - Ithaca

Table 17. 1957-59 Data Summary for 1956 Alfalfa Variety and Fall Management Trial - Ketola Field, Ithaca, N.Y.  
Broadcast seeded May 8, 1956; split-plot design; six replications; seeding rate 10#/acre.  
Main plots are 6 cuttings treatments in 6 x 6 latin square; split-plots are 6 varieties.

Varieties	A = 2 cuttings/year				B = 3 cuttings/year				C = 3 cuttings/year			
	1957	1958	1959	Ave. 57-59	1957	1958	1959	Ave. 57-59	1957	1958	1959	Ave. 57-59
Vernal	4.49	4.35	3.15	3.99	5.36	5.11	4.18	4.88	4.85	5.05	3.59	4.49
Narragansett	4.77	4.57	3.45	4.26	5.39	5.20	4.07	4.88	4.72	5.36	3.67	4.58
Ranger	3.98	4.30	3.14	3.80	4.79	4.90	3.81	4.50	4.26	4.76	3.34	4.12
Atlantic	4.33	4.47	3.23	4.01	5.17	5.18	3.71	4.68	4.87	5.23	3.56	4.55
DuPuits	4.68	4.50	3.51	4.23	5.66	5.47	3.78	4.97	5.05	5.55	3.68	4.76
Cardinal	4.55	4.49	3.26	4.10	5.33	5.28	3.55	4.72	4.90	5.59	3.85	4.77
Average	4.47	4.45	3.29	4.07	5.28	5.19	3.85	4.77	4.77	5.26	3.61	4.54
F-Varieties	5.57**	.35-	1.06-		5.42**	1.22-	1.46-		6.62**	6.42**	1.04-	
L.S.D. (P = .05)	.35	.50	.44		.36	.49	.56		.31	.36	.48	
C.V. %	6.6	9.4	11.4		5.7	8.0	12.3		5.4	5.8	11.2	
Varieties	D = 3 cuttings/year				E = 3 cuttings/year				F = 4 cuttings/year			
	1957	1958	1959	Ave. 57-59	1957	1958	1959	Ave. 57-59	1957	1958	1959	Ave. 57-59
Vernal	5.11	5.46	4.75	5.10	4.73	4.91	3.75	4.46	4.39	3.85	2.31	3.51
Narragansett	4.93	5.24	4.50	4.89	4.85	5.16	3.91	4.64	4.50	3.86	2.22	3.52
Ranger	4.12	4.47	3.77	4.12	4.23	4.65	3.30	4.06	3.89	3.44	1.95	3.09
Atlantic	5.02	5.25	4.05	4.77	4.77	4.81	3.42	4.33	4.37	3.73	1.91	3.33
DuPuits	5.10	5.62	4.02	4.91	5.20	5.64	3.46	4.76	5.00	4.16	1.73	3.63
Cardinal	4.79	5.49	4.33	4.87	5.07	5.42	3.68	4.72	4.97	4.29	2.04	3.76
Average	4.85	5.26	4.24	4.78	4.81	5.10	3.59	4.50	4.52	3.89	2.02	3.47
F-Varieties	17.68**	11.90**	3.58*		11.06**	10.51**	1.78-		24.45**	7.07**	1.86-	
L.S.D. (P = .05)	.26	.35	.55		.30	.34	.50		.25	.34	.45	
C.V. %	4.5	5.6	11.0		5.2	5.6	11.7		4.6	7.2	18.8	



## NEW YORK - Ithaca

Average Yields (over 6 varieties) for 6 Cutting  
Managements on Alfalfa, 1957-59 Ketola

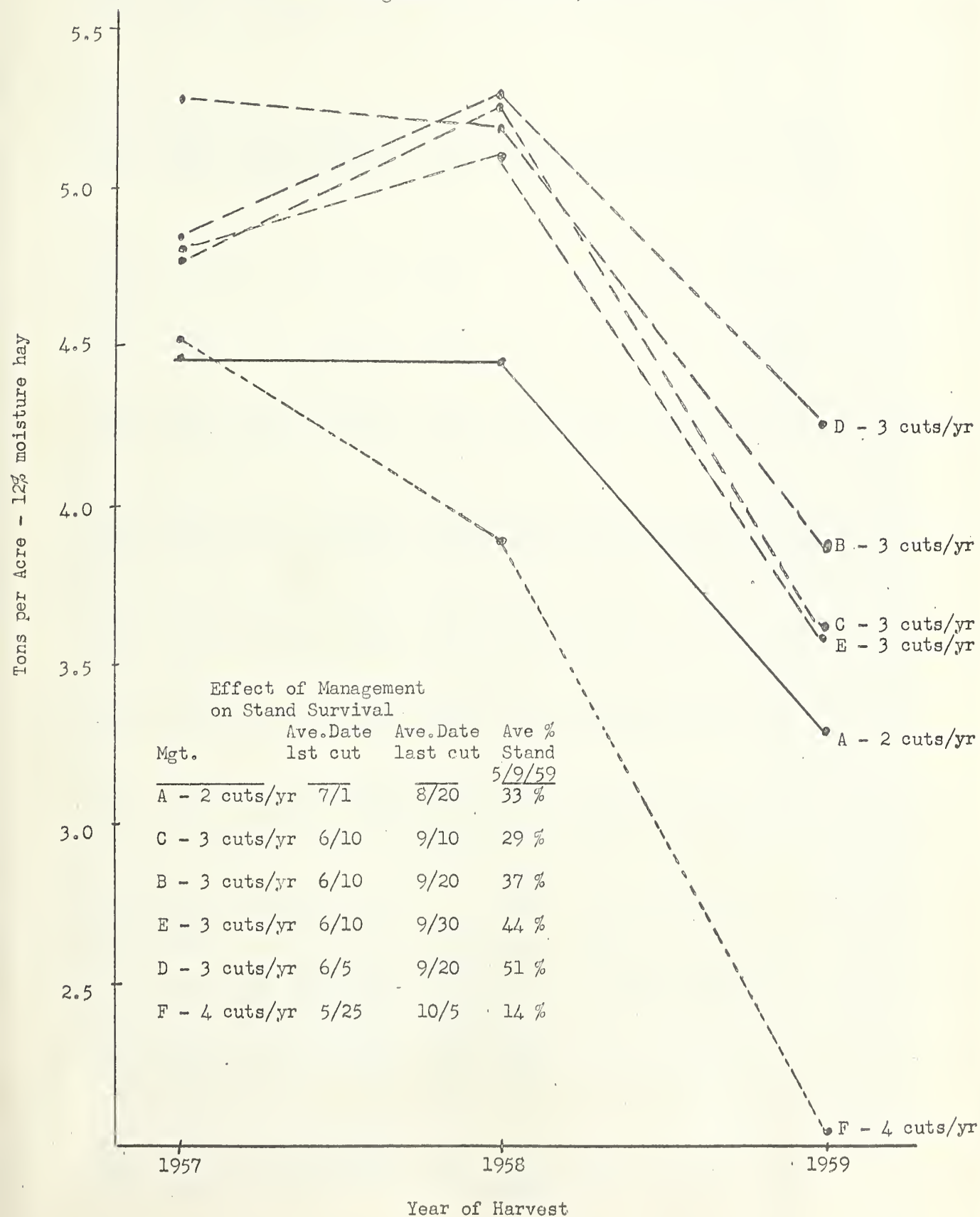


Table 18. 1959 Data from 1957 Alfalfa U.S.D.A. Singlecross Test, Ketola Field, Ithaca, New York.  
Broadcast seeded April 30, 1957. Randomized complete block design, 4 replications.  
Cutting management: 3 cuts/season

Random Number	Lot Number	Identification	Yield - Tons Per Acre (12% M)			% Legume			Yield		1958-59 Ave. Yield
			7/2	8/11	9/17	Total	7/2	8/11	9/17	Alfalfa Fraction	
1	57-65	49-40 x Minn. 247	2.08	.98	.82	3.88	74	100	100	3.34	3.95
11	57-75	49-18 x Minn. 247	1.90	1.11	.95	3.96	71	100	100	3.41	4.30
10	57-74	49-40 x Minn. 265	2.30	1.30	1.07	4.67	85	100	100	4.32	4.98
6	57-70	49-18 x Minn. 265	1.94	1.28	1.06	4.28	79	100	100	3.87	4.70
5	57-69	49-40 x S. Dak. H2-7	2.39	1.33	1.04	4.76	86	100	100	4.43	4.70
4	57-68	49-18 x S. Dak. H2-7	1.93	1.24	1.04	4.22	82	100	100	3.86	4.66
8	57-72	49-40 x S. Dak. H2-5	2.01	.96	.76	3.72	72	100	100	3.17	3.76
3	57-67	49-18 x S. Dak. H2-5	1.93	1.29	1.10	4.32	85	100	100	4.03	4.79
14	57-78	49-40 x Iowa 42	1.94	.93	.82	3.69	68	100	100	3.07	3.96
20	57-84	49-18 x Iowa 42	1.94	1.10	1.00	4.03	78	100	100	3.61	4.46
25	57-89	49-40 x Iowa 187-7	2.21	1.30	1.08	4.59	77	100	100	4.08	4.62
15	57-79	49-18 x Iowa 187-7	2.36	1.49	1.25	5.10	88	100	100	4.82	5.30
21	57-85	49-40 x Nebr. 1740	2.18	1.44	1.14	4.76	92	100	100	4.59	4.98
18	57-82	49-18 x Nebr. 1740	2.14	1.40	1.16	4.70	84	100	100	4.36	5.11
22	57-86	49-40 x Nebr. 1996	2.35	1.33	1.08	4.75	66	100	100	3.96	4.82
26	57-90	49-18 x Nebr. 1996	2.07	1.16	1.07	4.29	86	100	100	4.01	4.62
19	57-83	49-40 x Pa. 53-13	2.04	1.33	1.11	4.48	82	100	100	4.11	4.94
23	57-87	49-18 x Pa. 53-13	1.92	1.22	1.14	4.28	70	100	100	3.70	4.84
13	57-77	49-40 x Pa. 53-19	1.90	1.38	1.20	4.48	86	100	100	4.21	4.99
17	57-81	49-18 x Pa. 53-19	1.72	1.02	1.02	3.76	71	100	100	3.26	4.34

NEW YORK - Ithaca

Table 18. Continued

Random Number	Lot Number	Identification	Yield - Tons per Acre			% Legume		Yield Alfalfa Fraction	1958-59 Ave. Yield
			7/2	8/11	9/17	7/2	8/11 9/17		
24	57-88	49-40 x C 902 Nev.	1.89	1.42	1.12	73	100	3.92	4.72
9	57-73	49-18 x C 902 Nev.	1.78	1.34	1.17	78	100	3.90	4.60
7	57-71	49-40 x N. Car. 4	2.50	1.36	1.15	86	100	4.66	4.94
16	57-80	49-18 x N. Car. 4	2.16	1.49	1.15	92	100	4.63	5.21
2	57-66	49-18 x C89 Nev.	1.92	1.30	1.13	90	100	4.16	4.66
12	57-76	49-40 x 49-18	1.96	1.26	1.11	76	100	3.86	4.83
27	57-58	Narragansett	2.32	1.34	1.04	86	100	4.38	5.24
28	57-49	DuPuits	2.06	1.55	1.20	99	100	4.79	5.43
29	57-64	Vernal	2.32	1.38	1.09	92	100	4.60	5.09
		Average	2.07	1.28	1.07	81	100	4.03	4.74
		F - Varieties	3.48**	5.74**	4.17**				
		L.S.D. (P = .05)	.30	.19	.16				
		C.V. (%)	10.4	10.4	10.3				
		Ave. D.M. %	28.1	26.7	23.6				
		Average 49-40 in 12 single x's	2.15	1.26	1.03			3.99	4.61
		Average 49-18 in 12 single x's	1.98	1.26	1.09			3.96	4.74

Notes: 1. 1959 cutting schedule definitely did not favor expression of growth-type differences normally exhibited under this management. The delayed first cutting date was not desirable.

2. Stands appeared to stand up under the severe 58-59 winter very well. As in other trials, the effects of the severe winter were apparent on spring growth response.

3. Some volunteer grass was present in the 1st cut; 2nd and 3rd cuts were pure alfalfa.

## NEW YORK - Ithaca

Table 19. 1959 Data from 1957 Alfalfa Variety Test - Middle Ogden Field, Ithaca, New York.  
Broadcast seeded May 3, 1957. Randomized complete block design; 5 replications. Planting rate = 50 viable seed/sq. ft. Cutting management: 3 cuts/season.

Random Number	Entry	Seed Lot Number	Yield - Tons/Acre (12% M)		% Legume		Total Yield Alf. Fraction		% D.M. 6/9
			6/9	7/21	6/9	7/21	6/9	7/21	
1	Scandia (Alfa)	57-51	2.23	1.60	1.02	1.02	4.85	100	4.83
2	Alfa	57-56	2.39	1.78	1.06	1.06	5.22	100	5.22
3	Alfa - Elite	57-52	2.24	1.69	1.03	1.03	4.96	99	4.94
4	DuFuits	57-53	2.25	1.66	1.06	1.06	4.98	97	4.90
5	DuFuits	57-49	2.15	1.82	1.06	1.06	5.03	99	5.01
6	Cardinal	57-63	2.15	1.53	1.01	1.01	4.69	100	4.63
7	Tourneur 501	57-57	2.22	1.51	.96	.96	4.69	100	4.69
8	GPR - 2	-	2.25	1.64	1.11	1.11	5.00	100	5.00
9	Rambler	57-55	1.67	1.18	.73	.73	3.57	64	2.98
10	Lahontin	57-54	1.97	1.58	1.01	1.01	4.56	96	4.48
11	Ranger	57-59	2.01	1.59	1.06	1.06	4.66	100	4.54
12	Purdue F	57-62	2.10	1.57	.97	.97	4.64	99	4.62
13	N.Y. "A"	57-10	2.22	1.68	1.13	1.13	5.03	99	5.01
14	N.Y. "B"	57-8	2.21	1.67	1.11	1.11	5.00	98	4.95
15	N.Y. "C"	57-9	2.17	1.58	1.02	1.02	4.77	96	4.68
16	N.Y. "A"	1955 seed	2.25	1.68	1.15	1.15	5.08	99	5.06
17	N.Y. "B"	1955 seed	2.20	1.68	1.17	1.17	5.05	98	5.01
18	N.Y. "C"	1955 seed	2.16	1.59	1.06	1.06	4.82	98	4.77
19	Vernal	33273	2.28	1.57	1.09	1.09	4.93	94	4.80
20	Vernal	57-48	2.14	1.62	1.11	1.11	4.87	97	4.81
21	Narragansett	57-50	2.12	1.68	1.07	1.07	4.87	99	4.85
22	Narragansett	57-58	2.06	1.62	1.12	1.12	4.80	96	4.72
Average			2.16	1.61	1.05	1.05	4.82	96	4.73
F - Varieties			4.06**	6.47**	5.96**	5.92**			
L.S.D. (P = .05)			.20	.14	.10	.10			
C. V. %			7.4	6.7	7.9	7.9			
Ave. D. M. %			24.1	22.5	22.1	22.1			

Notes: There was no apparent change in the stands of alfalfa at this location over the past year -- all remain good.



## NEW YORK - Canton

Table 20. 1959 Data from 1957 Alfalfa Variety Trial - Canton, New York.  
 Broadcast seeded April 23, 1957. Randomized block design; 5 replications.  
 Planting rate = 50 viable seed/sq. ft. Cutting management: 2 or 3 cuts/season.

Random Number	Entry	Seed Lot No.	Yield - Tons per Acre (12% M)		
			1st cut 6/25	2nd cut 8/18	Season Total
1	Alfa - C.D.	57-51	1.59	2.32	3.91
2	Alfa - U.S.D.A.	57-56	1.52	2.21	3.73
3	Alfa - Elite	57-52	1.51	2.35	3.86
4	DuPuits	57-53	1.66	2.47	4.13
5	DuPuits	57-49	1.50	2.35	3.85
6	Cardinal	57-63	1.48	2.17	3.65
7	Tourneur 501	57-57	1.57	2.29	3.86
8	G P R - 2	57-55	1.47	2.37	3.84
9	Rambler	57-55	1.40	2.10	3.50
10	Lahontin	57-54	1.08	1.85	2.93
11	Ranger	57-59	1.48	2.18	3.66
12	Purdue F	57-62	1.48	2.21	3.69
13	N.Y. "A" (A 300)	57-10	1.83	2.28	4.11
14	N.Y. "B" (A 301)	57-8	1.64	2.40	4.03
15	N.Y. "C" (A 302)	57-9	1.48	2.22	3.70
16	N.Y. "A" (A 300)	'55 seed	1.71	2.34	4.04
17	N.Y. "B" (A 301)	'55 seed	1.57	2.32	3.88
18	N.Y. "C" (A 302)	'55 seed	1.19	2.09	3.28
19	Vernal	33273	1.49	2.31	3.79
20	Vernal	57-48	1.43	2.17	3.60
21	Narragansett	57-50	1.63	2.40	4.03
22	Narragansett	57-58	1.73	2.39	4.12
Average			1.52	2.26	3.78
F - Varieties			3.35**	2.88**	3.84**
L.S.D. (P = .05)			.25	.23	.41
C. V. %			13.2	7.9	8.6
Ave. D.M. %			21.8	27.3	

## Notes:

1. After the heavy incidence of grass in the first year of production of 1958, a 4#/acre application of Dala-pon was applied in early May of 1959. This was very effective in suppressing grass growth throughout the season.
2. While alfalfa stands on all entries were good, despite the grass encroachment, the 1959 yields were probably influenced by the grass content in 1958.

Table 21. 1959 Data from 1958 Alfalfa Variety x Type of Culture Trial - McGowan Field, Ithaca, New York.  
Planting Date: May 12, 1958; Split Plot Design - 6 reps.

Random Number	Main Plot Treatment*	Split Plot Treatments (Var. & Mixtures)	Yield - Tons per Acre (12% M)			% Legume			Yield of Legume Fraction T/A	Stand Legume 5/5/59 %
			6/10	7/21	9/2	6/10	7/21	9/2		
1	(A)	DuPuits Alf Alone	2.55	2.29	1.66	86	100	100	6.14	72
2	Seeded Alone	DuPuits Alf + Climax Tim	2.59	2.18	1.66	90	99	100	6.15	69
3		DuPuits Alf + Pennlate Orch	2.60	2.21	1.60	64	91	98	5.24	63
4		DuPuits Alf + Saratoga Brome	2.90	2.17	1.65	64	93	100	5.52	63
5		Narragansett Alf Alone	2.53	2.11	1.40	83	96	99	5.51	64
6		Vernal Alf Alone	2.41	2.04	1.34	82	95	97	5.21	67
7	(B)	DuPuits Alf Alone	2.55	2.44	1.69	98	100	100	6.63	80
8	Oat	DuPuits Alf + Climax Tim	2.74	2.42	1.67	98	100	100	6.78	80
9	Companion Crop Var. Garry Hvsted as silage 8/7/58	DuPuits Alf + Pennlate Orch	2.58	2.12	1.62	83	94	100	5.75	72
10		DuPuits Alf + Saratoga Brome	2.73	2.30	1.55	78	98	100	5.93	63
11		Narragansett Alf Alone	2.40	2.21	1.46	92	98	100	5.83	68
12		Vernal Alf Alone	2.47	1.97	1.31	91	99	100	5.51	74
13	(C)	DuPuits Alf Alone	2.61	2.53	1.68	98	100	100	6.77	75
14	Oat	DuPuits Alf + Climax Tim	2.64	2.31	1.62	96	100	100	6.46	73
15	Companion Crop Var. Minnhafer Hvsted as silage 7/21/58	DuPuits Alf + Pennlate Orch	2.72	2.09	1.57	71	86	97	5.25	62
16		DuPuits Alf + Saratoga Brome	2.78	2.21	1.61	74	98	100	5.83	67
17		Narragansett Alf Alone	2.37	2.04	1.35	91	99	99	5.51	66
18		Vernal Alf Alone	2.33	1.93	1.32	90	99	100	5.33	73
19	(D)	DuPuits Alf Alone	2.05	2.13	1.63	99	99	100	5.77	69
20	Oat	DuPuits Alf + Climax Tim	2.31	1.97	1.62	74	100	100	5.30	55
21	Companion Crop Var. Garry Hvsted as grain about 8/20/58	DuPuits Alf + Pennlate Orch	2.22	2.04	1.58	67	93	99	4.95	53
22		DuPuits Alf + Saratoga Brome	2.39	2.08	1.60	70	96	100	5.27	55
23		Narragansett Alf Alone	1.96	2.06	1.37	86	96	98	5.01	53
24		Vernal Alf Alone	2.01	1.94	1.24	87	98	99	4.88	53
25	(E)	DuPuits Alf Alone	2.13	2.07	1.57	97	100	100	5.71	64
26	Oat	DuPuits Alf + Climax Tim	2.57	1.89	1.61	78	100	100	5.50	53
27	Companion Crop Var. Minnhafer Hvsted as grain about 8/20/58	DuPuits Alf + Pennlate Orch	2.19	2.06	1.60	63	92	97	4.83	50
28		DuPuits Alf + Saratoga Brome	2.35	1.92	1.49	59	91	97	4.58	45
29		Narragansett Alf Alone	2.02	1.85	1.31	40	96	99	3.88	42
30		Vernal Alf Alone	1.90	1.84	1.27	85	98	97	4.65	47

\* Establishment Methods

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Table 21. Continued

Yield of Legume % Stand	Yield-Tons per Acre (12% M)				% Legume			Fraction Legume		% Stand Legume 5/5/59
	6/10	7/21	9/2	Total	6/10	7/21	9/2	T/A		
Varieties										
and										
Mixtures										
Over										
All Culture										
Treatments										
DuPuits Alf Alone	2.38	2.29	1.65	6.31	96	100	100	6.20	72	
DuPuits Alf + Climax Tim	2.57	2.15	1.64	6.36	87	100	100	6.04	66	
DuPuits Alf + Pennlate Or.	2.46	2.10	1.59	6.16	70	91	98	5.20	60	
DuPuits Alf + Saratoga Br.	2.26	2.14	1.58	6.34	69	95	99	5.43	59	
Marragansett Alf Alone	2.63	2.05	1.38	5.68	78	99	99	5.15	58	
Vernal Alf Alone	2.22	1.94	1.30	5.46	87	97	99	5.12	63	
Average	2.42	2.11	1.52	6.05					63	
F - Varieties				36.25**					10.22**	
Var. L.S.D. (P = .05)				.16					4.2	
F - Var. x Mgt.				.91-					.89-	
C. V. %				5.8					7.8	

- Comparison of Seeding Management Methods for 1st Year Returns and Effects on Consequent Production  
(Over all varieties and mixtures)

	Companion Crop Returns	Oct. Total Hay Hay Equivalent	1959 Hay Production			% Stand Legume 5/5/59		
			6/10	7/21	9/2 Total			
A Seeding made without grain companion crop Weeds and some hay removed 7/21/58 Hay cut made 10/3/58	1.04 DM T/A	1.57	2.61	2.60	2.17	1.55	6.31	66
B Seeding made with Carry oats companion crop Oats harvested as silage 8/7/58 Hay cut made 10/3/58	2.35 DM T/A	1.14	3.49	2.58	2.24	1.55	6.37	73
C Seeding made with Minnhafer oats companion crop Oats harvested as silage 7/21/58 Hay cut made 10/3/58	1.95 DM T/A	1.42	3.37	2.58	2.19	1.53	6.28	69
D Seeding made with Carry oats companion crop Grain harvested 8/20/58 Hay cut 10/3/58	22 bu.	.82	.82	2.16	2.04	1.51	5.69	56
E Seeding made with Minnhafer oats companion crop Grain harvested 8/20/58 Hay cut 10/3/58	9 bu.	.81	.81	2.19	1.94	1.48	5.60	50

Average effects of Grain vs Silage	2.15 T/A	1.28
Silage Mgt. on Oats Grain	15 bu.	.81
Difference		-.47 T/A
If hay value = \$20 a ton and grain = \$.80/bu.,		
the dollar difference per acre =	\$31.00 + \$9.40	\$13.60
Total difference for 2 years = \$54.00 - straw value		

Table 22. 1959 Data from 1958 Alfalfa Variety Trial, West Lamkin Field, Ithaca, New York.  
Planted May 10, 1958. Randomized complete block design, 5 replications.  
Planting rate = 50 viable seed/sq. ft.; cutting management: 3 cuts/season.

Random Number	Entry	N.Y. Seed Number	Yield - Tons per Acre (12% M)				Season Total
			6/5	7/21	9/3	Total	
1	Gillon	58-35	2.03	1.80	.85	4.68	Notes: 1. This test is on very fertile river bottom land. Drainage is generally excellent but under hot dry conditions, as in 1959, surface moisture conditions over the field vary greatly.
2	FD - 100	58-36	1.88	1.78	.80	4.47	
3	GPR - 2	58-34	1.82	1.64	.73	4.19	
4	Socheville	58-28	1.93	1.93	.99	4.84	
5	Alfa	58-29	2.29	2.03	.93	5.25	
6	Alfa	58-2	2.26	1.89	.85	5.00	2. This was observed in 1959 and reflected greatly by the alfalfa growth. Stands were generally good to excellent for the strains.
7	Alfa	57-51	2.55	1.90	.89	5.34	
8	Alfa	57-56	2.23	1.90	.92	5.05	
9	Cardinal	58-3	2.09	1.93	.96	4.97	
10	Cardinal	57-57	1.92	1.85	.94	4.71	
11	DuPuits	58-46	2.24	1.94	.92	5.10	3. Past experience has shown that greater root depth after the first harvest year for alfalfa tends to reduce this source of trial variation under these conditions.
12	DuPuits	58-18	2.00	2.12	1.00	5.12	
13	Vernal	58-16	2.03	1.81	.85	4.69	
14	Vernal	58-47	2.04	1.88	.87	4.79	
15	P.I. 246356	58-37	1.96	1.66	.88	4.51	
16	N.Y. Syn A-57	58-1	2.08	1.61	.77	4.46	4. Variety comparisons for 1st year production seed lots are probably pretty good in this test; the performance of a single-seed lot could be affected unduly by chance location of its plots within the trial. Error control through replications was effective only in the second harvest when significant treatment differences were also indicated.
17	N.Y. Syn A-56	57-10	2.05	1.64	.77	4.46	
18	N.Y. Syn B-56	57-8	1.92	1.64	.80	4.35	
19	Ranger	58-17	1.80	1.48	.83	4.11	
20	Narragansett	58-19	2.21	1.84	.86	4.92	
21	Narragansett	58-20	2.08	1.84	.89	4.80	
22	Narragansett	58-4	1.92	1.76	.86	4.54	
23	Narragansett	58-14	1.94	1.85	.89	4.68	
24	Narragansett	58-23	2.03	1.84	.97	4.83	
25	Narragansett	57-50	2.15	1.84	.90	4.88	
Average			2.06	1.82	.88	4.75	
F - Varieties			1.48-	2.39**	1.00-	1.76*	
L.S.D. (P = .05)			.39	.26	.19	.66	
C. V. %			15.2	11.2	17.6	11.1	
Ave. D. M. %			20.2	21.3	20.3		



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Table 23. 1959 Data from 1958 Alfalfa U.S.D.A. Singlecross Test, W. Lamkin Field, Ithaca, New York.  
 Seeded May 10, 1958; 6' x 6' triple lattice, 6 replications; planting rate = 50 viable seed/sq. ft.  
 Cutting management: 3 cuts/season.

Random Number	Entry	Yield - Tons/Acre (12% M)			Season Total(Adj)	% Legume			Total Alfalfa Fraction	Color	
		6/16-25	8/4	9/14		6/16	8/4	9/14		10-most green 6/16	9/14
6	49-40 x Minn 247	2.09	1.44	.91	4.52	86	100	100	4.15	7.8	8.5
5	49-18 x Minn 247	1.91	1.48	.95	4.44	79			3.94	9.0	9.5
8	49-40 x Minn 265	2.32	1.68	.97	4.83	80			4.51	7.3	7.8
7	49-18 x Minn 265	2.24	1.81	1.04	5.03	82			4.69	8.2	8.7
25	49-40 x S. Dak. H-2-7	2.22	1.63	1.02	4.75	88			4.60	8.5	8.0
20	49-18 x S. Dak. H-2-7	1.99	1.57	.98	4.60	88			4.30	8.0	9.3
24	49-40 x S. Dak. H-2-5	2.13	1.46	.87	4.51	86			4.16	8.3	8.8
19	49-18 x S. Dak. H-2-5	1.85	1.72	1.04	4.54	94			4.50	8.8	8.8
2	49-40 x Iowa 42	2.15	1.59	.92	4.75	88			4.40	8.5	9.0
1	49-18 x Iowa 42	2.42	1.75	.96	5.10	79			4.62	8.8	9.2
4	49-40 x Iowa 187-7	2.01	1.60	1.04	4.63	82			4.29	8.0	8.8
3	49-18 x Iowa 187-7	1.98	1.73	1.06	4.93	88			4.53	8.7	9.5
10	49-40 x Nebr. 1740	2.17	1.72	1.01	4.86	81			4.49	8.3	9.0
9	49-18 x Nebr. 1740	2.02	1.61	1.07	4.82	91			4.52	8.5	9.5
12	49-40 x Nebr. 1996	2.06	1.63	1.05	4.78	80			4.33	8.2	9.2
11	49-18 x Nebr. 1996	2.35	1.67	1.10	4.99	84			4.74	9.0	9.7
22	49-40 x Pa. 53-13	2.09	1.90	1.12	5.06	83			4.75	8.5	9.3
17	49-18 x Pa. 53-13	1.94	1.68	1.04	4.69	81			4.29	8.5	9.8
23	49-40 x Pa. 53-19	2.01	1.87	1.13	5.09	95			4.91	8.5	9.7
18	49-18 x Pa. 53-19	2.19	1.65	1.01	4.84	80			4.41	8.3	9.5
14	49-40 x Nev. C902	1.79	1.54	.98	4.33	80			3.95	8.0	8.7
13	49-18 x Nev. C902	1.78	1.61	.99	4.47	76			3.95	8.5	9.2

Table 23. Continued

Random Number	Entry	Yield - Tons/Acre			Season Total (Adj)	% Legume			Total Alfalfa Fraction	Color	
		6/16-25	8/4	9/14		6/16	8/4	9/14		6/16	9/14
21	49-40 x N.C. 4	1.93	1.67	1.09	4.83	84	100	100	4.38	7.3	8.5
16	49-18 x N.C. 4	2.07	1.76	1.07	5.01	86			4.61	8.5	9.0
15	49-18 x 49-40	2.05	1.72	1.15	5.04	83			4.57	8.5	9.5
26	49-40 x N.C. 42	2.34	1.89	1.16	5.19	89			5.13	9.2	9.8
27	49-18 x C 89	1.77	1.49	1.00	4.33	87			4.03	9.2	9.8
28	Mass. Polycross 1	2.16	1.64	.95	4.65	86			4.45	8.3	9.0
29	Mass. Polycross 2	2.48	1.81	1.08	5.19	71			4.65	8.7	9.0
30	Ranger F.C. 34043	2.08	1.66	.98	4.70	88			4.47	7.8	8.3
31	Vernal F. C. 34104	2.37	1.86	1.05	5.27	90			5.04	8.3	8.5
32	C 902 x N.Y. 49-40	2.06	1.50	.95	4.44	68			3.85	8.2	8.8
33	Narragansett F.C. 34045	2.28	1.87	1.09	5.22	85			4.90	8.5	8.7
34	Buffalo F.C. 34042	1.78	1.64	1.07	4.49	87			4.26	8.3	8.2
35	Atlantic F.C. 34044	2.11	1.73	1.11	4.89	85			4.63	8.0	8.5
36	DuPuits 58-46	2.23	1.87	1.14	5.13	88			4.97	8.5	8.7
Average		2.09	1.68	1.03	4.80	84	100	100	4.47	8.4	9.0
F - Varieties		.95-	2.89**	4.46**	2.61**						
L.S.D. (P = .05)		.53	.21	.10	.57						
C. V. %		22.4	11.0	8.1	10.4						
Ave. D. M. %		29.0	33.3	22.7							
Ave. of NY 49-40 in Single X's		2.08	1.64	1.01	4.74				4.41	8.1	8.8
Ave. of NY 49-18 in Single X's		2.06	1.67	1.03	4.79				4.42	8.6	9.3

Note: Good stands on all entries but trial variability was higher than normal due to effect of dry conditions of first-year stands on a droughty soil. First cut harvest interrupted by 9 days of wet weather.

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Table 24. 1959 Data from 1958 Narragansett Seed Generation and Source Test, McGowan Field, Ithaca, New York. Broadcast seed May 12, 1958. Randomized complete block design, 6 replications. Planting rate = 50 viable seed/sq. ft. Cutting management = 3 cuttings/season.

Random Number	Seed Class and Identity	N.Y. Seed Number	Yield - Tons per Acre (12% M)			Notes:
			7/1	8/12	10/1 Total	
1	High Seed Select - Wyo.	58-4	2.62	1.95	1.22	1 - Entry No. 2 had three filler reps of 58-20. Entry No. 3 had one filler rep of 58-20.
2	Low Seed Select. - Wyo.	58-5	2.99	2.04	1.40	
3	Breeders Seed, R.I. -1954	58-6	2.85	1.98	1.41	2- Planting was virtually weed-free.
4	Breeders Seed, R.I. -1957	58-7	2.87	1.93	1.32	
5	Fd. - Utah - 1953	58-9	2.93	2.01	1.43	3 - Entries 7 and 12 are different years' production from the field where selections were made for seed production in 1957.
6	Fd. - Idaho - 1953	58-10	3.00	2.04	1.41	
7	Fd. - Wyo. - 1956	58-22	2.98	1.98	1.32	4 - Performance of 1 and 12 believed associated with rather definite evidence for incidence of selfed seed set under field conditions.
12	Fd. - Wyo. - 1957	58-21	2.83	1.91	1.33	
8	Reg. Oreg. - 1957	58-8	3.12	2.07	1.37	
9	Reg. Idaho - 1957	58-11	3.34	2.02	1.40	
10	Reg. Idaho - 1957	58-13	3.01	1.98	1.33	
11	Reg. Idaho - 1957	58-12	3.19	2.07	1.39	
13	Reg. S.Dak. - 1957	58-15	3.14	2.03	1.34	
14	Cert. - 1957	58-19	2.78	1.97	1.35	
15	Cert. - 1957	58-20	3.06	1.91	1.46	
16	Cert. Idaho - 1956	57-50	3.19	1.99	1.35	
Average						
F - Entries						
L.S.D. (P = .05)						
C. V. %						
Ave. Breeders (2 lots)						
Ave. Fd. (4 lots)						
Ave. Reg. (5 lots)						
Ave. Cert. (3 lots)						
			2.86	1.95	1.36	6.17
			2.93	1.98	1.37	6.29
			3.16	2.03	1.37	6.55
			3.01	1.95	1.39	6.45
			2.99	1.99	1.36	6.35
			1.66-	.61-	1.27-	1.72-
			.40	.18	.14	.52
			11.5	7.9	9.1	7.2

Table 25. 1959 Data from 1958 U.S.D.A. Variety-Cross Trial, Ketola Field, Ithaca.  
Broadcast seeded May 21, 1958; 6 x 6 triple-lattice, 6 replications.  
Cutting management: 3 cuts/season

Random Number	Entry	Yield - Tons per Acre (12% M)		9/23 Total Season (Adj. Lattice)		% Legume		% Stand*	
		6/24	8/7	6/24	8/7	6/24	8/7	6/24	8/7
1	Atlantic x Buffalo	2.24	1.82	1.22	5.22	85	100	100	61
2	Atlantic x Ind. Syn. F.	2.46	1.78	1.04	5.42	86	100	100	73
3	Atlantic x Lahontan	2.12	1.62	.99	4.78	78	100	100	56
4	Atlantic x Narragansett	2.52	1.96	1.14	5.49	81	100	100	68
5	Atlantic x Rambler	2.45	1.81	1.08	5.35	87	100	100	66
6	Atlantic x Vernal	2.41	1.76	1.10	5.28	82	100	100	70
7	Buffalo x Ind. Syn F.	2.30	1.91	1.18	5.22	85	100	100	61
8	Buffalo x Lahontan	2.14	1.70	1.09	4.82	80	100	100	48
9	Ind. Syn F. x Narragansett	2.51	1.76	1.13	5.40	83	100	100	60
10	Ind. Syn F x Vernal	2.35	1.88	1.14	5.29	88	100	100	68
11	Lahontan x Vernal	2.38	1.85	1.13	5.15	81	100	100	48
12	Narragansett x Williamsburg	2.43	1.96	1.17	5.49	83	100	100	63
13	Ranger x Vernal	2.29	1.82	1.13	5.31	84	100	100	58
14	Vernal x Rambler	2.43	1.77	1.07	5.38	86	100	100	66
15	Vernal x Williamsburg	2.19	1.81	1.16	5.23	86	100	100	63
16	Atlantic and Buffalo	2.07	1.80	1.14	5.20	83	100	100	63
17	Atlantic and Lahontan	2.21	1.76	1.08	5.21	89	100	100	61
18	Atlantic and Narragansett	2.28	1.87	1.14	5.31	88	100	100	73
19	Atlantic and Rambler	2.34	1.83	1.20	5.20	82	100	100	53
20	Atlantic and Vernal	2.35	1.98	1.18	5.55	89	100	100	71
21	Buffalo and Lahontan	2.15	1.62	1.06	4.79	78	100	100	44
22	Lahontan and Vernal	2.45	1.76	1.06	5.20	83	100	100	53
23	Narragansett and Williamsburg	2.22	1.73	1.15	5.21	88	100	100	70
24	Ranger and Vernal	2.26	1.72	1.10	5.13	85	100	100	63
25	Vernal and Rambler	2.46	1.89	1.06	5.42	87	100	100	59
26	Vernal and Williamsburg	2.35	1.76	1.15	5.16	81	100	100	62
27	Mass. Polycross	2.27	1.59	.98	4.84	85	100	100	48
28	F. C. 34044 - Atlantic	2.34	1.95	1.25	5.48	88	100	100	68
29	F. C. 34042 - Buffalo	2.15	1.79	1.16	5.08	90	100	100	51
30	F. C. 34174 - Ind. Syn. F	2.30	1.66	.98	5.07	90	100	100	63



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Table 25. Continued.

Random Number	Entry	Yield - Tons per Acre (12% M)				Total Season (Adj. Lattice)			% Legume			% Stand 5/9/60
		6/24	8/7	9/23	9/23	6/24	8/7	9/23	6/24	8/7	9/23	
31	Lahontan	1.93	1.38	.91	4.31	74	100	100	74	100	100	37
32	Narragansett	2.38	1.87	1.12	5.45	91	100	100	91	100	100	76
33	Rambler	2.33	1.54	.93	4.69	79	100	100	79	100	100	49
34	Ranger	2.27	1.63	1.07	4.97	86	100	100	86	100	100	53
35	Vernal	2.62	1.83	1.08	5.51	87	100	100	87	100	100	68
36	Williamsburg	2.11	1.75	1.14	5.01	87	100	100	87	100	100	62
	Average	2.31	1.77	1.10	5.18	85	100	100	85	100	100	60
	F - Varieties (RCB)	2.53**	3.56**	2.92**	3.84**							6.38**
	L. S. D. (P = .05)	.25	.19	.12	.30							10
	C. V. %	9.5	9.3	9.9	5.0							14.6
	Ave. % DM	26.8	31.1	25.9								
Additional Variety Crosses in Separate but Adjacent Test												
37	Rambler x Lahontan	1.78	1.51	.86	4.15	79	100	100	79	100	100	33
38	Rambler x Buffalo	2.05	1.59	1.11	4.74	89	100	100	89	100	100	53
39	Rambler x African	1.51	1.37	.83	3.71	69	100	100	69	100	100	12
40	Ind. F x African	1.70	1.58	1.05	4.32	82	100	100	82	100	100	21
	L.S.D. (P = .05)	.18	.27	.10	.38							
	C. V. %	8.1	14.4	8.0	7.4							

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Table 26. Comparison of Variety Crosses, 50-50 Blends and Parent Variations  
 Location: Ketola Field, Ithaca, N.Y.  
 1959 Yield Data (Adj. Means) for Total Season Yield of Hay (T/A at 12% M)  
 Management: 3 cuts/season

	Parent 1	Parent 2	Parent Ave.	Var. Cross	50-50 Blend	High Parent
Atlantic x Buffalo	5.48	5.08	5.28	5.22	5.20	5.48
" x Ind. F	5.48	5.07	5.27	5.42	---	5.48
" x Lahontan	5.48	4.31	4.89	4.78	5.21	5.48
" x Narragansett	5.48	5.45	5.46	5.49	5.31	5.48
" x Rambler	5.48	4.69	5.08	5.35	5.20	5.48
" x Vernal	5.48	5.51	5.49	5.28	5.55	5.51
Vernal x Williamsburg	5.51	5.01	5.26	5.23	5.16	5.51
" x Lahontan	5.51	4.31	4.91	5.15	5.20	5.51
" x Ind. F	5.51	5.07	5.29	5.29	---	5.51
" x Ranger	5.51	4.97	5.24	5.31	5.13	5.51
" x Rambler	5.51	4.69	5.10	5.38	5.42	5.51
Buffalo x Ind. F.	5.08	5.07	5.07	5.22	---	5.08
" x Lahontan	5.08	4.31	4.69	4.82	4.79	5.08
Narragansett x Williamsburg	5.45	5.01	5.23	5.49	5.21	5.45
" x Ind. F	5.45	5.07	5.26	5.40	---	5.45
Var. crosses v.s. ave. of 2 parents (15 crosses - ave.)			5.17	5.26		
Var. crosses v.s. 50-50 Blends of parents (11 crosses - ave.)				5.23	5.22	5.45
Var. crosses v.s. Hi-parent of cross (15 crosses - ave.)				5.26		5.43

L.S.D. ( $P = .05$ ) for individual means = .30 T/A  
 Approx. L.S.D. ( $P = .05$ ) for comparing ave. of 15 crosses = .08 T/A

Notes: Conclusions on the 1st year data are that on the average, variety crosses do yield significantly more than the average performance of the 2 parent varieties. On the average, however, such crosses give no higher performance than 50-50 blends of the same varieties. On present evidence, variety crosses are generally inferior to the best parent of a cross. When two adapted varieties are crossed, the cross may equal the best parent's performance, but does not exceed it.

## NEW YORK

Table 27. 1959 Data from 1958 Alfalfa and BFT Variety x Harvest Date Trial (Meredith) E. Ketola Field.  
Broadcast seeded May 21, 1958; split-plot design; 5 replications.  
Main plots are indicated 1st cut hvst. dates; split plots are varieties.

Random Number	Entry	1st Cutting					% D.M. of Harvested Forage (1)				
		Yield - Tons per acre (12% M) On Indicated Hvst. Dates									
		5/25	6/1	6/8	6/15	6/23	5/25	6/1	6/8	6/15	6/23
1	DuPuits Alfalfa	1.77	2.11	2.33	2.52	2.64	16.6	18.0	24.2	27.9	28.7
2	Ranger Alfalfa	1.25	1.72	2.09	2.29	2.47	16.8	17.2	24.4	28.4	28.6
3	Vernal Alfalfa	1.43	2.01	2.22	2.65	2.72	17.1	17.8	24.6	28.5	28.7
4	Narragansett Alfalfa	1.46	1.80	2.37	2.53	2.81	16.3	17.1	24.3	28.7	29.2
5	Viking BFT	.95	1.23	1.76	2.03	2.05	15.8	14.2	20.7	25.2	25.6
6	Empire BFT	.90	1.25	1.80	2.02	2.27	16.1	14.0	20.0	24.5	24.0
Average		1.29	1.69	2.10	2.34	2.50	16.4	16.4	23.1	27.2	27.5
F - Varieties		22.00**	37.52**	15.21**	6.80**	14.76**	2.59-	54.92**	27.29**	11.25**	26.39**
L.S.D. (P = .05)		.21	.18	.20	.31	.22	.9	.7	1.2	1.6	1.2
C. V. %		12.3	8.0	7.2	9.9	6.7	4.2	3.3	3.9	4.5	3.4
(7/23 Aftermath Production from Above Cutting Treatment) (2)											
1	DuPuits Alfalfa	2.00	2.00	1.96	1.82	1.80	27.6	25.7	25.8	24.7	23.8
2	Ranger Alfalfa	1.63	1.69	1.75	1.50	1.53	25.0	24.2	24.3	24.3	23.6
3	Vernal Alfalfa	1.89	1.82	1.80	1.68	1.62	25.8	24.3	24.7	23.2	23.7
4	Narragansett Alfalfa	1.92	1.89	1.79	1.71	1.69	26.4	24.3	24.5	23.6	22.7
5	Viking BFT	1.99	1.52	1.30	1.15	1.11	23.7	21.9	21.9	20.4	20.1
6	Empire BFT	2.00	1.35	1.19	.86	.77	21.7	19.2	20.8	19.4	19.1
Average		1.90	1.71	1.63	1.45	1.42	25.0	23.3	23.7	22.6	22.1
F - Varieties		3.30*	20.15**	8.55**	88.66**	100.37**	31.19**	32.83**	32.91**	31.54**	42.77**
L.S.D. (P = .05)		.23	.16	.31	.12	.12	1.1	1.2	1.0	1.1	.9
C. V. %		9.2	7.1	14.6	6.1	6.3	3.4	3.9	3.1	3.8	3.1

- (1) Dry matter samples were entirely the variety and species indicated; yield data include the species and any volunteer weeds or grasses. Vigorous alfalfas were fairly pure, BFT was not.
- (2) Cutting management after 1st cutting was primarily to equalize plots for collecting 1960 data.



Table 28. 1959 Data from 1958 Alfalfa and BFT Variety x Harvest Date Trial (Meredith) Ellis Field.  
Broadcast seeded May 13, 1958. Split-plot design, 5 replications.  
Main plots are indicated 1st cut hst. dates; split-plots are varieties.

Random Number	Entry	1st Cutting						% D.M. of Harvested Forage (1)					
		Yield - Tons per acre (12% M) on Indicated Hst. Dates											
		5/26	6/1	6/8	6/15	6/22		5/26	6/1	6/8	6/15	6/22	
1	DuPuits Alfalfa	1.60	1.84	2.14	2.17	2.28		18.0	20.2	27.0	29.7	29.5	
2	Ranger Alfalfa	1.16	1.62	1.73	1.82	2.15		18.4	20.8	26.5	28.9	28.6	
3	Vernal Alfalfa	1.28	1.68	1.87	2.28	2.38		19.0	20.5	26.6	29.9	29.3	
4	Narragansett Alfalfa	1.23	1.65	1.84	2.04	2.35		19.2	19.1	25.7	29.4	28.4	
5	Viking BFT	1.37	1.63	1.95	1.98	2.21		15.5	18.9	21.9	23.7	24.9	
6	Empire BFT	1.22	1.46	1.86	2.07	2.30		15.5	16.9	20.6	24.9	24.3	
<hr/>													
Average		1.31	1.65	1.90	2.06	2.28		17.6	19.4	24.7	27.8	27.5	
F - Varieties		6.78**	1.26	1.92	4.21**	1.96		12.67**	4.25**	19.56**	26.53**	10.51**	
L.S.D. (P = .05)		.18	.32	.30	.23	.26		1.4	2.1	1.8	1.6	2.1	
C.V. %		10.5	14.8	11.8	8.5	8.7		6.0	8.0	5.7	4.2	5.7	
<hr/>													
(7/29 Aftermath Production from Above Cutting Treatment) (2)													
1	DuPuits Alfalfa	1.86	1.85	1.76	1.75	1.76		35.8	34.4	33.6	33.2	31.4	
2	Ranger Alfalfa	1.60	1.40	1.41	1.30	1.26		34.2	32.2	32.7	31.4	29.4	
3	Vernal Alfalfa	1.66	1.66	1.54	1.46	1.47		32.5	33.2	32.7	30.4	30.8	
4	Narragansett Alfalfa	1.61	1.52	1.52	1.42	1.46		33.2	30.6	32.1	30.2	29.6	
5	Viking BFT	1.86	1.55	1.45	1.36	1.40		30.1	29.7	29.2	27.1	27.5	
6	Empire BFT	2.19	1.41	1.15	1.07	1.00		29.3	26.4	25.1	28.0	25.5	
<hr/>													
Average		1.80	1.57	1.47	1.40	1.39		32.5	31.1	30.9	30.0	29.0	
F - Varieties		8.54**	4.22**	6.77**	13.86**	13.33**		14.98**	20.29**	25.50**	4.88**	8.68**	
L.S.D. (P = .05)		.23	.24	.23	.18	.20		1.9	1.9	1.9	3.0	2.2	
C.V. %		9.6	11.7	11.6	9.6	11.1		4.4	4.6	4.6	7.5	5.7	

(1) Dry matter samples were entirely the variety and species indicated; yield data include the species and any volunteer weeds or grasses. Vigorous alfalfas were fairly pure, BFT was not.

(2) Cutting management after 1st cutting was primarily to equalize plots for collecting 1960 data.



NEW YORK - Ithaca

Table 29. 1959 Data from 1958 Alfalfa - U.S.D.A. Singlecross Test, Middle Ogden Field, Ithaca, New York.  
Broadcast seeded May 22, 1958. Randomized complete block design, 6 replications.  
Cutting management: 3 cuts/season

Random Number	Entry	Yield - Tons/Acre (12% moisture)		% Alfalfa			Yield Alfalfa Fraction		% D.M. 6/26
		6/26	8/3	9/21	6/26	8/3	9/21	6/26	
13	Pa. 53-13 x C902	2.22	1.90	1.27	5.38	91	100	5.19	27.5
19	Pa. 53-19 x C902	2.10	1.67	1.31	5.07	94	100	4.95	28.6
4	Pa. 53-13 x Neb. 1996	2.03	1.75	1.32	5.10	93	100	4.96	28.2
14	Pa. 53-19 x Neb. 1996	2.11	1.67	1.25	5.02	93	100	4.88	28.7
5	Pa. 53-13 x S.D. H 25	2.10	1.65	1.19	4.93	95	100	4.84	27.6
7	Pa. 53-19 x S.D. H 25	2.17	1.62	1.16	4.94	96	100	4.86	28.5
12	Pa. 53-13 x Neb. 1740	2.08	1.70	1.27	5.05	96	100	4.97	27.6
23	Pa. 53-19 x Neb. 1740	2.29	1.75	1.32	5.36	94	100	5.22	27.8
17	Pa. 53-13 x Minn 265	2.19	1.71	1.25	5.15	97	100	5.08	28.2
9	Pa. 53-19 x Minn 265	2.15	1.63	1.34	5.12	93	100	4.97	28.5
22	Pa. 53-13 x S.D. H27	2.18	1.82	1.28	5.28	96	100	5.19	26.4
16	Pa. 53-19 x S.D. H27	2.08	1.47	1.11	4.66	94	100	4.54	28.4
18	Pa. 53-13 x Minn 247	2.19	1.65	1.29	5.13	95	100	5.02	27.8
20	Pa. 53-19 x Minn 247	2.21	1.59	1.20	5.00	96	100	4.91	28.7
10	Pa. 53-13 x Iowa 42	2.18	1.70	1.21	5.09	96	100	5.00	27.9
21	Pa. 53-13 x N.G. 42	2.14	1.79	1.36	5.28	96	100	5.20	27.1
3	Pa. 53-13 x Pa. 53-19	2.18	1.75	1.33	5.25	96	100	5.17	28.4
2	Pa. 53-19 x N.G. 4	2.11	1.54	1.28	4.93	95	100	4.82	28.7
6	Pa. 53-19 x Iowa 187-7	2.18	1.69	1.24	5.10	90	100	4.89	28.6
15	Pa. 53-19 x NY 49-40	2.10	1.59	1.19	4.88	91	100	4.69	29.0
1	Ind. 116 x C89	1.78	1.51	1.23	4.52	95	100	4.43	28.3
11	Ind. 116 x Ind. 136	2.06	1.55	1.35	4.96	95	100	4.86	28.3
8	Ind. 116 x Iowa 187-7	2.22	1.72	1.32	5.25	92	100	5.07	27.8
24	DuFuits F.C. 33895	2.17	1.86	1.37	5.40	97	100	5.33	27.7
25	Narragansett 58-19	2.16	1.63	1.22	5.01	97	100	4.95	27.7
	Average	2.13	1.68	1.27	5.07	95	100	4.97	28.1
	F - Varieties	1.12	1.46	2.03**	1.55				
	L.S.D. (P = .05)	10.3	12.6	9.13	8.47				
	C.V. Pa 53-13 in 7 crosses	2.14	1.74	1.27	5.15			5.04	27.6
	Ave. Pa 53-19 in 7 crosses	2.16	1.63	1.24	5.02			4.90	28.5

Notes: 1- Reps in this test are gross drainage, V x R interaction is definite. Good stands and good production generally.  
2- First cut error was increased by rain during harvest operations. Late harvest cut down on usual between growth-type expression under this management. Some crosses have excellent appearance.

## NORTH CAROLINA

1959 was an exceptionally good year for alfalfa production on the Piedmont and mountain research stations. During the summer, a heavy infestation of Colletotrichum reduced stands of Du Puits noticeably on the Piedmont station (Test A-67, table 30). This stand depletion will be reflected in stand counts and yields taken in 1960. In test A-48 (table 31) stands of Rambler have been badly depleted while stands of North Carolina Synthetics A(51)5, B(51)6, B(51)7, and D(51)12 were showing the least stand depletion.

Extended dry periods following the second and third cuttings at Pittsboro were primarily responsible for the lack of a fourth and fifth cutting and the resultant low yields of entries in test A-81 (table 32).

Stands of Du Puits in A-82 (table 33) were severely depleted during the summer primarily because of Colletotrichum. Least stand loss in this test was observed in MSA and MSB. MSA and MSB were clearly superior in both rust reaction and leafhopper yellowing. The relatively high scores for leafhopper yellowing in this test were the result of an extremely heavy infestation of leafhoppers caused by migration from an older adjacent planting of alfalfa which was cut about 10 days after A-82 had been cut.

An epiphytotic of Pyrenopeziza medicaginis occurred on the grazing management study A-63 (table 34). N. C. Syn. F(56)1 appears to have a greater degree of resistance than other entries in this test followed closely by Rhizoma, Vernal and Du Puits.

## NORTH CAROLINA - Salisbury

Table 30. Alfalfa strain test A-67 - Piedmont Research Station, Salisbury, N. C.

Seeded Aug. 23, 1957. Randomized block, 4 replications. Broadcast plots 5' x 20'.  
Seeding rate 25 lbs. germinable seed per acre.

Entry	P.I. or F.C. No.	1959 Hay yield - Tons/acre							Total yield 1958 (4 cuts)	Stand 1/ 3/19	Spring 2/ growth 4/6	Recov- ery 2/ after cutting 5/20
		1959 Hay yield - Tons/acre										
		5/8	6/10	7/9	8/11	9/8	Total					
Atlantic	Wyatts	1.53	1.22	.53	1.10	.54	4.92	3.22	21.8	6.2	6.5	
Buffalo	33557	1.48	1.11	.51	.95	.52	4.57	3.18	11.2	7.0	6.8	
Williamsburg	33204	1.43	1.21	.67	.96	.56	4.83	3.19	19.8	6.0	4.5	
N.N.C. Syn. B(51)7		1.56	1.28	.50	1.15	.64	5.13	3.64	10.5	4.2	5.0	
N.N.C. Syn. D(51)10		1.62	1.33	.72	1.05	.63	5.35	3.73	12.8	5.0	4.5	
N.N.C. Syn. D(51)12		1.74	1.35	.64	1.09	.64	5.46	3.57	12.2	4.2	4.2	
N.N.C. Syn. F(56)1		1.76	1.41	.80	.86	.59	5.42	4.00	12.8	3.2	2.5	
N.N.C. Syn. F(56)2		1.36	1.25	.63	1.04	.63	4.91	3.71	11.2	3.0	1.5	
DuPuits	Wyatts	1.70	1.35	.70	.85	.49	5.09	3.91	15.5	2.8	2.0	
Indiana Syn. F <sub>1</sub>		1.59	1.15	.45	.91	.47	4.57	2.77	22.5	8.2	8.0	
Indiana Syn. C.		1.59	1.21	.43	.91	.50	4.64	3.17	14.5	8.2	8.5	
501 Tourneur	PI237231	1.69	1.35	.65	.88	.46	5.03	4.13	14.5	4.5	3.8	
Chartainvilliers	PI188795	1.53	1.24	.62	1.01	.54	4.94	3.51	14.5	5.0	4.0	
Ile-De-France	PI188797	1.34	1.17	.57	.97	.58	4.63	3.42	10.2	4.8	4.2	
W-268	PI188798	1.66	1.30	.78	.83	.45	5.02	4.03	19.0	5.2	3.2	
N.N.C.M.S.A(57)		1.62	1.22	.54	1.02	.56	4.96	3.24	12.5	7.0	7.2	
N.N.C.M.S.B(57)		1.76	1.38	.74	1.06	.61	5.55	3.47	11.5	4.2	4.2	
L.S.D. (.05)							.51	.46	7.9	.8	1.8	
L.S.D. (.01)							.68	.62	n.s.	n.s.	2.1	
C.V. (%)							7	9	38	22	23	

1/ Number of empty 4 inch squares in 12 square feet.

2/ Scores 1 - 9; 1 = most growth, 9 = least growth.

## NORTH CAROLINA - Waynesville

Table 31. Alfalfa strain test A-48. Mountain Research Station, Waynesville, N. C.

Seeded April 5, 1956. Randomized block, 4 replications. Broadcast plots 5' x 20'.  
Seeding rate 23 pounds germinable seed per acre.

Entry	F.C. No.	Hay yields Tons/acre					Stand 4/7 <sup>1/</sup>	Recovery after cutting 5/29 <sup>2/</sup>
		5/12	6/17	7/14	8/11	1959 Total	1958 (3 cuts) Total	1957 (3 cuts) Total
Atlantic	32954	1.51	1.05	.50	.87	3.93	2.87	2.25
Buffalo	32569	1.39	.84	.40	.82	3.45	2.45	1.94
DuPuits	24647	1.66	1.28	.59	.88	4.41	3.68	2.92
Narragansett	32768	1.60	1.14	.46	.79	3.99	3.25	2.58
Vernal	24790	1.49	.80	.32	.80	3.41	2.82	2.29
Williamsburg	24803	1.61	1.11	.49	.94	4.15	3.06	2.32
N. C. Syn. A(51)5	32642	1.64	1.25	.59	1.03	4.51	3.28	2.66
N. C. Syn. B(51)6	32643	1.65	1.37	.60	1.06	4.68	3.38	2.76
N. C. Syn. B(51)7	32644	1.84	1.11	.52	.94	4.41	2.96	2.57
N. C. Syn. D(51)10	32645	1.57	1.16	.57	1.01	4.31	3.09	2.52
N. C. Syn. D(51)12	32646	1.63	1.17	.57	1.04	4.41	3.25	2.42
Rambler	H.O.G.	1.11	.54	.19	.46	2.30	1.96	1.71
L.S.D. (.05)						0.63	.47	.29
L.S.D. (.01)						0.85	.63	.39
C.V. (%)						11	11	8
								40
								22

<sup>1/</sup> Number of empty 4 inch squares in 12 square feet.

<sup>2/</sup> 1 = greatest recovery, 9 = least.



## NORTH CAROLINA - Pittsboro

Table 32. Alfalfa strain test A-81 - Pittsboro, N. C.

Seeded Sept. 3, 1958. Randomized block, 6 replications. 3 row plots, 15' long, 9" between rows, 12" between plots. Seeding rate 6 gms. germinable seed per plot.

Entry	Hay yield Tons/acre				Total	Spring growth 1/ 3/24	Stand 2/ 5/19	Fall 3/ growth 10/26
	5/5	6/9	8/3					
N. C. Syn. A(51)5	1.37	1.14	.98		3.49	4.3	.7	3.8
N. C. Syn. B(51)6	1.15	1.05	.87		3.07	5.8	5.3	2.8
N. C. Syn. B(51)7	1.44	1.21	.99		3.64	4.0	1.0	3.1
N. C. Syn. D(51)10	1.05	1.01	.91		2.97	5.5	2.8	3.0
N. C. Syn. D(51)12	1.45	1.16	.89		3.50	4.8	.5	3.3
N. C. Syn. E(57)	1.38	1.06	.84		3.28	5.2	1.8	4.1
N. C. Syn. F(56)1	1.31	1.21	.85		3.37	5.0	1.0	4.0
N. C. Syn. F(56)2	1.06	1.02	.92		3.00	4.8	2.2	2.3
N. C. Syn. G1(57)	1.31	1.23	.89		3.43	4.8	.5	4.3
N. C. Syn. G2(57)	1.29	1.21	.84		3.34	4.3	1.3	4.7
N. C. Syn. G3(57)	1.35	1.25	.88		3.48	5.0	.7	3.7
N. C. Syn. G4(57)	1.37	1.17	.94		3.48	4.7	.3	3.7
3468 Stoneville Polycross #1	1.10	.99	.88		2.97	5.3	1.5	4.3
3485 Kansas Syn. B1	1.11	.99	.92		3.02	5.7	1.7	4.3
Atlantic	1.26	1.04	.89		3.19	6.0	1.3	4.9
Buffalo	1.12	.93	.89		2.94	5.7	1.3	3.5
Williamsburg	1.21	1.09	.88		3.18	5.0	1.2	3.9
DuPuits	1.25	1.14	.92		3.31	4.8	3.5	3.1
N.C.M.S.A. (57)	1.16	.94	.87		2.97	5.7	3.0	4.1
N.C.M.S.B. (57)	1.31	1.12	.89		3.32	5.3	2.7	3.0

## NORTH CAROLINA - Pittsboro

Table 3. Alfalfa strain test A-81 - Pittsboro, N. C. (continued)

Entry	Hay yield Tons/acre			Spring growth 3/24	Stand 2/19	Fall growth 10/26
	5/5	6/9	8/3	Total		
L.S.D. (.05)				.41	2.4	.7
L.S.D. (.01)				.54	n.s.	1.3
C.V. (%)				11	122	32

1/ Scores 1 - 9; 1 = most.

2/ Number of empty 6 inch spaces per plot.

3/ Scores 1 - 9; 1 = most growth, 9 = least.

## NORTH CAROLINA

Table 33. Alfalfa strain test comparing disease and insect resistance of the 7th cycle of phenotypic recurrent selection in two groups (M.S.A. and M.S.B.) with check Varieties, A-82.

Transplanted April 1, 1959. Randomized block, 14 replications. Plants spaced on 42" centers, 12 plants per plot.

Entry	Leafhopper yellowing <sup>1/</sup> 8/14	Rust <sup>2/</sup> 11/11	Stand <sup>3/</sup> 11/11
M.S.A. (58)	5.6	1.4	149
M.S.B. (58)	5.4	1.4	151
Atlantic	7.1	4.2	134
Buffalo	6.9	3.6	135
Williamsburg	6.7	3.8	142
DuPuits	7.2	4.1	95
L.S.D. (.05)	.5	.03	
L.S.D. (.01)	.7	.04	
C.V. (%)	11	12	

<sup>1/</sup> Score 1 - 9; 1 = least yellowing, 9 = most.

<sup>2/</sup> Score 1 - 5; 1 = no pustules observed, 5 = heaviest incidence. Uromyces striatus.

<sup>3/</sup> Number of plants surviving 11-11-59 out of 168 transplanted.

## NORTH CAROLINA - Laurel Springs

Table 34. Alfalfa variety grazing management study, A-63, Upper Mountain Research Station, Laurel Springs, N. C.

Seeded August 6, 1957. Randomized block, 4 replications. Broadcast plots 4' x 10'. Seeding rate 25 lbs. germinable seed per acre.

Entry	F.C. No.	Stand <sup>1/</sup> 4/7	Yellow leaf blotch <sup>2/</sup> 7/25
Atlantic	33492	9.0	4.0
Buffalo	33557	14.5	5.8
DuPuits		10.5	2.8
Narragansett	33751	12.2	4.2
Rambler	33701	46.0	3.8
Rhizoma	33691	12.0	2.5
Vernal	31983	13.5	2.5
Williamsburg	33204	13.2	5.0
N. C. Syn. A(51)5		9.2	4.2
N. C. Syn. B(51)7		10.8	5.0
N. C. Syn. D(51)12		13.8	5.0
N. C. Syn. F(56)1		10.5	1.8
L.S.D. (.05)		6.5	
L.S.D. (.01)		8.8	
C.V. (%)		31	

<sup>1/</sup> Number of empty 4 inch squares in 8 square feet.

<sup>2/</sup> Pyrenopeziza medicaginis; Scored 1 - 9, 1 = least, 9 = most.



## PENNSYLVANIA - Ligonier

Table 35. Alfalfa Variety Trial. Ligonier, Pennsylvania

Date Seeded: May 6, 1957. Seeding Rate: 12# Acre. Broadcast.

4 Replications. Randomized Block Design.

Entry	1959 Yield Tons/Acre Alfalfa Fraction				Average 1958-59
	6/10	7/23	9/15	Total	
Du Puits	1.93	.57	1.27	3.76	4.41
Nomad	1.77	.30	1.03	3.10	3.31
Buffalo	1.70	.47	1.15	3.32	3.30
Ranger	1.60	.48	1.02	3.10	3.54
Vernal	1.82	.52	1.20	3.54	4.49
Naragansett	1.79	.62	1.24	3.64	4.34
Atlantic	1.84	.52	1.20	3.56	4.00
Alfa	1.84	.51	1.34	3.69	3.73
Tourneur 501	1.81	.55	1.19	3.55	3.54
Av.	179	.50	1.18	3.48	
F	.60 (ns)	7.23**	8.25**	3.62**	
L.S.D.	-	.10	.10	.36	
CV %	13.23	13.12	6.17	7.36%	

## PENNSYLVANIA - Troy

Table 36. Alfalfa Variety Trial. Troy, Pennsylvania

Date Seeded: May 6, 1955. Seeding rate: 10# Acre.

4 replications. Randomized Block Design. Broadcast Seeding

Entry	1959 Yield Tons/Acre Alfalfa fraction				Average 1956-59
	6/4	7/20	9/23	Total	
Du Puits	.98	.45	.65	2.08	2.61
Nomad	.35	.02	.08	.46	1.47
Buffalo	.86	.21	.41	1.48	1.84
Ranger	1.22	.42	.68	2.32	2.42
Vernal	1.86	.59	1.04	3.48	3.14
Narragansett	1.47	.57	.80	2.84	2.70
Atlantic	1.36	.48	.82	2.65	2.58
A-224	1.19	.50	.57	2.26	2.40
Grimm	.90	.32	.46	1.67	2.22
Av.	1.13	.40	.61	2.14	
F	3.65**	3.97**	5.30**	10.43**	
L.S.D.--.05	.65	.27	.35	.45	
CV %	39.64	46.19	39.34	25.27	

## PENNSYLVANIA - Landisville

Table 37. NE-28 Alfalfa Varieties and Synthetics Test.

Landisville, Pa. Date Seeded: August 19, 1958.

5 replications. Randomized Block Design.

Seeding rate: 50 viable seed/sq. ft. Broadcast seeding.

Entry	Yield Tons Acre (Alfalfa Fraction)				Season Yield Av.
	5/25	6/30	8/7	9/11	
New York A	1.08	.44	.34	.80	2.64
New York B	1.41	.56	.56	.98	3.52
Buffalo	1.25	.44	.47	.86	3.02
Williamsburg	1.32	.51	.48	.90	3.21
Lahontin	1.13	.46	.45	.95	2.99
Ranger	1.10	.41	.41	.82	2.74
Atlantic	1.33	.59	.57	1.00	3.49
Du Puits	1.32	.53	.48	.94	3.28
Narragansett	1.31	.52	.56	1.03	3.43
Vernal	1.23	.49	.48	.92	3.12
NK-501	1.16	.53	.50	.93	3.12
Alfa	1.40	.69	.59	.95	3.62
Moapa	.60	.31	.34	.68	1.92
Average	1.20	.50	.48	.90	3.09
F	31.92**	2.41*	1.98	1.44 <sup>n.s.</sup>	14.16**
L.S.D.--.05	.11	.17	.16	-	.34
CV %	7.02	26.84	27.00	19.50%	8.73

## PENNSYLVANIA - Centre Hall

Table 38. Alfalfa Variety Trial. Agronomy Farm, Centre Hall, Penna.

Date Seeded: May 15, 1958. 4 replications. Randomized

Block Design. Seeding Rate: 50 viable seed/sq. ft.

Broadcast seeding.

Entry	1959 Yield Tons/Acre Alfalfa fraction			
	6/3	7/17	8/21	Total
Northrup King 505	1.42	.85	.54	2.81
Rudy Patrick 744	1.44	.79	.46	2.70
Tourneur 501	1.48	.92	.56	2.95
Cardinal	1.21	.73	.48	2.42
Du Puits	1.24	.76	.42	2.43
Vernal	1.40	.86	.53	2.79
Alfa	1.14	.67	.41	2.21
Caliverde	1.34	.74	.50	2.58
Rambler	1.40	.49	.22	2.11
Av.	1.34	.76	.46	2.56
F	1.06 <sup>n.s.</sup>	1.99 <sup>n.s.</sup>	2.99 <sup>n.s.</sup>	3.31**
L.S.D.-.05	-	-	-	.44
C.V. %	16.98	23.39	25.91	12.20



## PENNSYLVANIA - University Park

Table 39. NE-28 Alfalfa Varieties and Synthetics Test

University Park, Pa. Date Seeded: May 1, 1956

Seeding Rate: 12# acre. 4 replications. Randomized

Block Design. Broadcast seeding.

Entry	Yield Tons Acre (Alfalfa Fraction)				Season Yield Av. 1957-59
	6/3	7/16	8/20	Season Yield	
Indiana Syn. F	1.44	.76	1.00	3.20	3.61
New York A	1.71	.92	1.02	3.65	3.81
New York B	1.61	.93	1.12	3.66	3.77
New York C	1.48	.80	1.12	3.40	3.70
Syn. A-242	1.48	.80	.90	3.18	3.55
Buffalo	1.19	.54	.81	2.54	3.10
Williamsburg	1.25	.59	.83	2.68	3.20
Lahontin	1.29	.50	.68	2.47	2.72
Ranger	1.48	.72	.85	3.05	3.35
Atlantic	1.47	.94	.97	3.38	3.29
DuPuits	1.29	.78	.94	3.01	3.63
Narragansett	1.68	.92	1.06	3.66	3.83
Vernal	1.53	.80	.99	3.31	3.59
Av.	1.45	.77	.94	3.16	3.47
F	4.64**	7.92**	3.86**	13.18	
L.S.D.--.05	.21	.15	.19	.32	
CV %	10.32	23.95	14.03	7.12	

## PENNSYLVANIA - University Park

Table 40. Miscellaneous Alfalfa Trial. University Park, Pa.

Date Seeded: May 1, 1956. Seeding Rate: 10# Acre.

4 replications. Randomized Block Design. Broadcast seeding.

Entry	Yield Tons/Acre. 6/3	7/16	Alfalfa Fraction 8/20	Fraction Season Total	Average 1957-59
P.I. 230223	1.35	.62	.83	2.80	3.48
P.I. 230225	1.20	.46	.77	2.43	3.11
Alfa	1.28	.32	.52	2.12	3.33
Cardinal	1.11	.30	.39	1.80	3.04
DuPuits	1.24	.28	.47	1.99	3.12
Ranger	.86	.35	.45	1.66	2.91
Narragansett	1.38	.76	1.04	3.18	3.53
Av.	1.20	.44	.64	2.28	3.22
F	2.32 <sup>n.s.</sup>	7.82**	4.62**	10.32**	
L.S.D.--.05	-	.19	.34	.49	
CV %	19.16	28.57	33.51	14.82	

## PENNSYLVANIA - University Park

Table 41. Varieties, Varietal Mixtures and Varietal Hybrids.  
 1959 adjusted mean season total yields of hay (12% moisture)  
 in tons per acre. Three harvests on 5' x 20' broadcast plots  
 seeded in 1958 in 6 replicates; triple lattice.

Identity	Variety mixture	$\bar{X}$ of parents	Variety cross	Best parent
Atlantic - Buffalo	4.50	4.45	4.25	4.68
Atlantic - Lahontan	4.31	4.05	4.16	4.68
Atlantic - Narragansett	4.79	4.72	2.69	4.75
Atlantic - Rambler	4.38	4.36	4.60	4.68
Atlantic - Ind. Syn. F		4.65	4.71	4.68
Atlantic - Vernal	4.79	4.87	4.66	5.05
Buffalo - Lahontan	3.86	3.82	4.05	4.21
Buffalo - Ind. Syn. F		4.41	4.62	4.61
Ind. Syn. F - Narragansett		4.68	4.69	4.75
Ind. Syn. F - Vernal		4.83	4.74	5.05
Lahontan - Vernal	4.20	4.24	4.24	5.05
Narragansett - Williamsburg	4.76	4.47	4.63	4.75
Ranger - Vernal	4.64	4.68	4.64	5.05
Vernal - Rambler	4.45	4.55	4.55	5.05
Vernal - Williamsburg	4.61	4.62	4.69	5.05
Mass. Polycross (4.24)	—	—	—	—
$\bar{X}$ of 15		4.49	4.53	4.81
$\bar{X}$ of 11 (comparable)	4.48	4.44	4.47	4.82

LSD. 05 among entry means = 0.32. (Note there are no significant differences among a particular 2-variety mean, mixture of 2 parent varieties or variety cross but that the better parent variety yielded significantly more in a number of comparisons.)

RHODE ISLAND - Kingston  
Rhode Island Agricultural Experiment Station.

Table 42. Uniform Alfalfa Test - 1959

1. Seeded - May 1956 (broadcast). 2. Experimental Design - Randomized blocks - 4 replications. 3. Seeding rate - 12 pounds per acre germinable seed. 4. Fertilizer - 600 pounds per acre 0-15-30 (split).					
Variety	Stand (percent) 6/1	Total Yield - 12% Moisture		Season Yield 1959	Average Yield 57-58-59
		1st cut 6/16	2nd cut 8/3		
Atlantic	69	1.96	1.10	3.06	3.20
Williamsburg	54	1.98	1.04	3.02	3.02
Ranger	35	1.98	.94	2.92	2.90
Narragansett	70	2.09	1.16	3.25	3.28
Buffalo	38	1.94	.92	2.86	2.79
Grimm	49	1.98	.98	2.96	2.79
Rhizoma	51	2.04	1.01	3.05	3.03
Lahontan	28	1.70	.81	2.51	2.36
DuPuits	80	2.17	1.14	3.31	3.53
Vernal	61	2.01	1.00	3.01	2.95
Sevelra	46	1.94	.96	2.90	2.84
Talent	50	1.80	.94	2.74	2.61
Nomad	19	1.70	.81	2.51	2.33
A - 224	30	2.01	.91	2.92	2.83
Average	48.5	1.95	.98	2.93	2.89
LSD (5%)	22.4	.32	.13	.36	0.26
C. V. (%)		11.94	9.46	8.99	6.50

The 1959 growing season was generally cooler and wetter than normal. Bacterial wilt disease and crown rots became moderately severe (4th year of stand) and invasion of grass-type weeds was substantial. DuPuits and Narragansett were the outstanding varieties during 1959.



## TENNESSEE - Blount County

Table 43. REGIONAL ALFALFA VARIETY TEST

Cumberland loam (Main Experiment Station, Blount A6)

Yields in Tons of Dry Matter per Acre

Variety	1959					Seasonal Production		
	7 May T/A	3 June T/A	16 July T/A	2 Nov. T/A	% Alfalfa 1/	1959 T/A	1958 T/A	1957 T/A
N. C. Syn. B(51)6	1.14	.73	.59	.79	42	3.25	2.90	2.87
N. C. Syn. D(51)10	.92	.67	.66	.84	45	3.09	2.82	2.78
DuPuits	1.06	.68	.59	.72	28	3.05	3.11	3.50
Atlantic	.79	.61	.62	.93	15	2.95	2.70	2.44
Vernal	1.07	.59	.56	.71	22	2.93	2.88	2.76
Narragansett	.92	.57	.67	.77	24	2.93	2.82	2.64
N. C. Syn. A(51)5	.81	.59	.58	.83	29	2.81	2.67	2.64
Williamsburg	.75	.57	.53	.87	25	2.72	2.84	2.50
Buffalo	.71	.58	.48	.89	24	2.66	2.72	2.51
Indiana Syn. F	.82	.46	.45	.89	14	2.62	2.55	2.48
N. C. Syn. D(51)12	.57	.48	.49	.84	21	2.38	2.59	2.72
Lahontan	.47	.54	.40	.85	13	2.26	2.60	2.20
N. C. Syn. B(51)7	.54	.37	.39	.95	18	2.25	2.37	2.53
Caliverde	.47	.35	.38	.94	9	2.14	2.26	2.04
Nomad	.44	.31	.28	.74	8	1.77	2.18	2.09
S	.331	.167	.212	.125		.583	.410	.342
C.V. (%)						22.3	15.4	13.2
L.S.D. (.05)	.39	.06	N.S.	N.S.		.22	.58	.49

Design: randomized complete block, four replications.

Planted: August 24, 1956, broadcast seeding at 20 pounds per acre.

Fertilization: 32-96-32 at seeding; 0-50-50 on September 3, 1957; 0-45-135 plus 20 pounds per acre borax on February 24, 1959.

Harvested on: May 8, June 17, July 25, October 29, 1957; May 12, June 24, August 11, October 27, 1958; May 7, June 3, July 16, November 2, 1959.

1/ Percent alfalfa in harvested forage, average of four replications of hand-separated samples.





